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ABSTRACT

Building on an international survey including nearly 10,500 teachers and 200,000 students in 32 countries, this booklet presents empirical data relevant to the controversial issue of how children should be taught to read. The booklet examines a broad spectrum of teaching conditions, teacher characteristics, and instructional practices and relates them to the students' reading achievement. Chapters in the booklet are: (1) The Teaching of Reading; (2) Method and Design of the Study; (3) The Proximal Conditions of Teaching; (4) Teacher Characteristics; (5) Teaching Strategies; and (6) Teaching Practices and Student Achievement. (Contains 33 references.) (RS)

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The International Association
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TEACHING READING AROUND THE WORLD

IEA STUDY OF READING LITERACY

CS011367

INGVAR LUNDBERG · PIRJO LINNAKYLÄ

Teaching reading around the world



**The International Association
for the Evaluation of Educational Achievement**

January 1993



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PREFACE

Successful reading instruction is a key factor in education. In a world full of information and new technology, reading becomes increasingly important for the society as well as for the individual and, thus, the teaching of reading becomes more important than ever before.

The IEA Study of Reading Literacy provides a unique opportunity to investigate how reading is taught in a large number of education systems with wide variations in traditions, economic development, school organization, classroom conditions, teacher characteristics, orthography, etc. A description of the topology of reading instruction around the world might then contribute to a more context-sensitive perspective on teaching and reveal that there is more than one single route to successful reading acquisition.

In an international study, one may expect a wider spectrum of teaching conditions and instructional practices in the total set of countries than within any single education system. Given the high variance of teaching across countries, it might be possible to identify those teaching behaviors and attitudes to reading instruction that are associated with higher reading achievement among students. Guidelines would then be provided for the improvement of teaching conditions and reading instruction. However, teaching is necessarily bound to unique configurations of cultural and historical conditions. Therefore, transferring a successful practice from one education system to another is not a simple matter, but instead requires great care and sensitivity.

On the other hand, there is also a lot of unity in the culture of reading instruction around the world. The texts have many universal features in their functions, contents, structures and textual characteristics. The unity among various texts makes them possible to translate. Furthermore, the cognitive demands, processes of comprehension and individual strategies in approaching reading tasks may reflect unity as well as diversity in reading and the teaching of reading. In fact, the IEA Study of Reading Literacy assumes that there is a common basis that makes international comparison possible.

The study is based on data from 32 systems of education with reading literacy as the measure of performance. The study was conducted by the International Association for the Evaluation of Educational Achievement (IEA) between 1989 and 1992. The data were collected in late 1990 and early 1991.

The funding of all national work was provided by agencies within each country. The funding for the international work was provided by the Mac Arthur Foundation, the Mellon Foundation, the U.S. National Academy of Sciences, the European Community, Unesco, and by many of the countries participating in the study. The International Coordinating Center was housed at the University of Hamburg's Institute of Comparative Education. Our thanks to all of them.

It was Andreas Schleicher at the International Coordinating Center who was in charge of the international coordination and data processing for the study. The

data processing team at Hamburg created the working files. Dirk Hastedt formed the construct 'indicators'. Stefan Seyfert undertook several of the specific analyses reported in this booklet. The booklet was prepared for publication by Britta Niemann with the assistance of Jedidiah Harris, Julianne Friedrich, Bettina Westphalen and Ellen Ziesmann at the ICC in Hamburg and by Marja Kankaanranta in Finland.

We wish to thank Warwick Elley, Neville Postlethwaite, Elaine Degenhart, Alan Purves and Richard Wolf for their helpful and wise comments on the manuscript. Although we take full responsibility for the views and interpretations expressed in this booklet, we would like to acknowledge the collective contribution of all of our colleagues involved in the Reading Literacy Study whose genuine encouragement and constructive criticism have certainly been a benefit to us in this project.

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November 1992

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CHAPTER ONE

THE TEACHING OF READING

The question of how children should be taught to read has always been widely discussed. In his classic book on reading from 1908 Edmund B. Huey wrote: "A survey of the views of some of our foremost and soundest educators reveals the fact that the men of our time who are most competent to judge are profoundly dissatisfied with reading as it is now carried on in the elementary school."

Since then there have been decades of extensive research, public debate, and increased media attention around the world, and still, no universal agreement has been reached about either the theoretical foundations of reading or practical approaches towards reading instruction.

Wide variations in orthography, age of starting school, and the cultural, historical, and social contexts of schooling can certainly account for some of the lack of general consensus. But even within a given educational system there are often wide disagreements on how reading should be taught. Indeed, it would often seem that the whole field of reading is in a state of flux. According to a review of the state of the art, reading is regarded as "the most politicized topic in the whole field of education" (Adams 1990, p. 13). Large variations in teachers' beliefs and teachers' instructional approaches should then be expected, within countries as well as among countries. On the other hand, the inherent characteristics of what the reading task itself demands may lead us to expect some universal patterns of instructional practices around the world.

In this booklet, the results from a large comparative survey of 32 systems of education involving 10,500 teachers teaching a total of almost 200,000 nine-year-old and fourteen-year-old students are reported. In the first booklet from the IEA Reading Literacy Study (Elley 1992) the main focus was on student reading achievement and reading habits. In this booklet, the main focus is on the topology of reading instruction or, in other words, how reading is taught in different countries. First, the similarities and differences in teacher characteristics are described as well as the nature of teaching reading in many countries. Second, the results of this descriptive inquiry will be used to identify those teaching behaviors and attitudes that are associated with higher reading achievement among students. If such behaviors can be identified they can be used to improve teaching practices and student learning in the participating countries. As a background for interpreting and discussing the results to be presented, a brief outline is sketched of some of the current issues and controversies concerning reading and reading instruction.

Strategies of Early Reading Instruction

The two major opposing camps in reading education are those advocating a code-oriented approach (phonics) and those advocating a meaning-oriented

approach (whole language). The tension between these views is so strong that some outside observers would even seem to find themselves in the midst of a full-scale reading "war". *Phonics* proponents seem to endorse a stage-wise, objective-based strategy where specific decoding skills are taught with the aim of full mastery within the first two school years. For reading to be learnable, according to this view, children must become aware of and understand the fundamental nature of the alphabetic principle. In order to read with fluency and comprehension they must acquire ready familiarity with frequent words and with spelling patterns and their mapping to sounds. Thus, according to the phonics view, the ability to read words is critical for skillful reading comprehension.

Whole language advocates propose a more naturalistic, text-based approach where meaningful engagement with natural texts and real books is emphasized. Children will, according to this view, acquire the alphabetic code along the way in a natural manner. The whole language approach seems to assume a parallel between natural, spoken language acquisition and reading. In a guide to parents and teachers Goodman (1986) stressed the ease and naturalness of language acquisition and suggests that learning to read would be equally natural and simple if only purpose and meaning in reading were emphasized. Children will learn to read by themselves if only they are given an adequate corpus of meaningful language. There is some evidence that, in an environment rich in print and texts, such is the case. Reading programs that include attention to the structure of words are seen to interfere with this natural learning experience by breaking up whole language into meaningless pieces.

It is important to make clear that the controversy between a code-based approach and a whole language approach is not just an extension of the old debate between whole word and phonics approaches (Chall 1967). In fact, whole language proponents would categorize both of these approaches as traditional in the sense that they emphasize explicit skill instruction, but from different directions. At the same time, whole language proponents have been criticized for portraying traditionalists as advocates of only decontextualized, artificial skill instruction when, in fact, conventionally based approaches in most cases may involve the frequent reading of stories and other coherent texts acknowledging that there is more to reading than phonics (see Stahl and Miller 1989).

Comprehension Instruction

Whereas teaching the mechanics of reading is an important part of most reading methods courses in teacher training institutions around the world, nothing comparable exists in most courses when it comes to the teaching of comprehension.

There is evidence from observational studies that reading comprehension is, in fact, not being taught (Durkin 1978-1979). Although teachers asked students

many questions about the meaning of the text, they gave no guidance and did not explain anything to those students who did not understand the text. Instead, instruction consisted primarily of assessment and answering questions in work books. No directions were given to the students on how to approach a text or about ways to increase comprehension and learning.

According to a strong traditional view, reading comprehension is a skill which can be decomposed into a *set of subskills* as, for example, sequencing the events in a story, being able to paraphrase, knowing the vocabulary, predicting outcomes of a story, making inferences, finding the main idea, summarizing, applying the information given, and so forth. This subskill view also implies that reading can be improved by teaching students each of the necessary subskills to a minimal level of mastery. From this task-analytic conception of reading, a curriculum of reading instruction has emerged which is also reflected in published instructional material. There is research suggesting that the ability to find the theme or main idea is amenable to instruction (see, e.g., Baumann 1984). Even very young children are able to read "between the lines" in a text or to go beyond the information given. There is research support for emphasizing *inferential strategies* already from the very beginning of reading instruction. However, direct instruction of inference making, finding the main idea, using story structure, learning new words from context, etc., might be superfluous given that students perform these processes in their normal language comprehension outside the context of reading (Stahl 1992).

Reading seems to be a far more complex process than had been envisioned earlier. Since 1970, reading research, within the context of cognitive psychology, has provided a rich and complex view of reading where the interactive and *constructive* nature of reading has been emphasized (for a review, see Lundberg 1991). The prior knowledge that the students bring to the reading task and the cognitive strategies they use to monitor and maintain their understanding play important roles in the reading process (Baker and Brown 1984). Thus, the reader is regarded as an active individual, a participant who constructs meaning through the integration of existing knowledge and new knowledge from the text and the flexible use of strategies to foster, regulate and maintain comprehension. Reading instruction that emphasizes the student's existing knowledge and flexible strategies should then be more successful in promoting reading ability than the more traditional subskill approach based on a drill-and-practice model of instruction. However, as the work of Kintsch (1988) and others illustrates, theory is drifting back and being tempered by a consideration of how the external stimulus (the text structure) constrains comprehension. This new *text-based* orientation tends to de-emphasize the role of prior knowledge. Reading is then regarded more as a linguistic skill than as a general cognitive activity.

In the same vein, emphasizing the role of the text, Pearson and Fielding (1991) have characterized the research of comprehension instruction in terms of the *type of text* on which it is focused. According to this characterization, instructional strategies and activities are peculiarly suited to either *narrative* or

expository texts. This division, which has guided the assessment of reading ability in this study, is regarded as more pragmatic than conceptual, although it has been argued by Bruner (1986) among others that narrative comprehension involves a different type of thinking than what is involved in informative, argumentative comprehension. These two modes of thought, two modes of cognitive functioning, provide distinctive ways of ordering experience and of constructing reality.

Efforts to enrich narrative text comprehension are often designed either to activate background knowledge of the topics, milieux, characters, or structure of the story or to facilitate inferential questions and discussions that highlight the desired parts and the main theme of the story (Pearson and Fielding 1991). Attempts to decipher expository texts and to improve informative or general comprehension have been lately mediated by instructional actions that monitor strategies like determining main point, visualizing text structure, summarizing information, generating questions, or drawing inferences (Dole et al. 1991, Paris et al. 1992, Pearson et al. 1992).

There has emerged from the whole language group an extension into comprehension instruction at the later grades which is also related to the literary approach of "reader response" criticism, which argues that the meaning of a text is determined by the reader's approach rather than being driven by the text. The instructional strategies are based on the work of Bruner (1986), but take his theory into the way people read rather than into the organization of the text as Pearson does. In this view of teaching reading comprehension, many of the activities associated with text forms and specific comprehension strategies are deemed less appropriate in the classroom; what is more important is learning the appropriate forms of discourse and exchange or negotiation of individual responses to what is read within small groups and later the whole class (Langer 1984, Dias and Hayhoe 1988). Reading becomes intimately involved in learning those forms of oral and written discourse which express the individual or group understanding of the text. Such an approach to comprehension has gained ground in various parts of the world, where it is seen as complementary to the process approach to writing.

Is There any Best Method of Teaching Reading?

From the debate on methods of instruction in the early grades, it might seem as if the most crucial factor in the acquisition process is related to teaching method, such as a phonics, or a meaning-based approach. Yet a major finding from program comparison studies is the great variation in effectiveness within any particular instructional method (see, e.g., Stahl and Miller 1989). It is highly unlikely that a universally best method for teaching reading can be defined. The effectiveness of a method depends much on the details of its implementation, its materials, its teachers, its students, its cultural context and the compatibility of each with the other. According to Lohnes and Gray (1972) not more than three

percent of the variance in student reading achievement can actually be accounted for by method alone. Other instructional conditions, such as time for reading instruction, have been found to account for substantially more variance (Rosenshine and Stevens 1984).

The issue of the best method should also be seen in the light of the considerable amount of informal literacy socialization that takes place outside the context of formal reading instruction in school. A child who enjoys half an hour of storybook reading per day over the preschool years together with informal experience with toy letters, computer games, road signs, playful writing, encouragement to learn the names of letters, etc., will enter the first grade with thousands of hours of active involvement in text and print. This child has certainly also experienced the joy of reading. Other children may have a very limited amount of exposure to print and very few opportunities to interact with text under the supervision of encouraging and interested adults. In fact, such initial differences between children even tend to increase over the years in a snowballing process recently come to be known as the *Matthew Effect* in educational development (Stanovich 1986).

How can teachers cope with such differences given only 200 or so hours per year devoted to literacy instruction in the early years? Children with rich stimulation at home and in preschool settings are typically successful in school even if the initial instruction is badly organized; the poorer group rarely recovers from the disadvantage they arrive with. Since factors in home background seem to play such a crucial role and the variation in home conditions tends to be wide, it has been difficult to demonstrate clear effects of variations in teaching practices. "Schooling does not seem to make much of a difference" has been the sad conclusion of several survey studies (e.g., Coleman et al. 1966), although there are occasional reports of remarkably overachieving schools.

Some Limitations of a Survey Study of Literacy

In an international study including many different countries with many different teaching traditions and many different practices of early, informal literacy socialization, one may expect a wider spectrum of influential factors in the total set of countries than within any single educational system. Thus, given the high variance across countries, it might be possible to detect signals of teaching practices that have an influence on student reading achievement and reading activities and thereby demonstrate that teaching, after all, makes a difference.

The main source of data for the present report is the questionnaire response administered to the teachers of a probability sample of students in each of the 32 participating countries. In all, some 10,500 teachers answered the questionnaires. The questions concerned some general characteristics of the teachers, such as sex, education and experience. Furthermore, the questionnaire tried to assess the teachers' professional knowledge, their professional attitudes or

value positions, their implicit theories of reading instruction and of learning how to read, their teaching practices, and their own readership.

The limitations of questionnaire data in this context are quite obvious. In many questions on instructional practices and attitudes there is a high risk of *compliance effects* or socially desirable responses being given. Many teachers might want to show themselves to be more 'sophisticated' and more advanced than they actually are in their daily teaching under stressful and noisy conditions and with all the practical duties they have to perform. Further to these limitations, some important dimensions of teaching, such as teachers' ability to interact and cooperate, their commitment, enthusiasm, responsibility, time management ability, evaluative skills, etc., cannot easily be captured by the questionnaire.

An analysis of the materials teachers use for reading instruction and the instruments they use to assess their student reading achievement would probably have provided a more concrete and perhaps a more valid notion of the belief systems of reading teachers or the "teaching culture" around the world. In a survey of this size, however, it was not possible to undertake such analyses within the prevailing limitations of time and resources. An even deeper understanding of the teaching processes would, of course, have been obtained through direct classroom observations of and in-depth interviews with the teachers. Such qualitative studies will be undertaken as a follow-up study in several participating countries where a small number of interesting classrooms (e.g., overachieving and underachieving classrooms) will be selected on the basis of the quantitative data collected in the main survey.

Reading and the teaching of reading are to a large extent cognitive-linguistic acts which are situated in social and cultural contexts. This implies that it is not desirable simply to take a successful approach to reading instruction from one country and expect that it will work equally successfully in another cultural setting. "The process of moving a program from one place to another requires care, adaptation and sensitivity to the mores of the new cultural context" (Stahl 1992).

Although this relativistic and contextual perspective is well taken, it should not prevent us from recognizing the invariance of successful teaching practices across many countries and sharing this knowledge in a sensible way.

CHAPTER TWO

METHOD AND DESIGN OF THE STUDY

Details about the conduct of the study are given in the main report of the IEA Reading Literacy Study (Elley (Ed.) in press) and in the booklet on reading achievement (Elley 1992). Here, only a brief outline is presented with specific emphasis on the Teacher Questionnaires.

One general aim of the study was to estimate the levels of reading development of 9- and 14-year-olds in each country. But a further major aim was "to identify differences in policies and instructional practices in reading, and to study the ways in which they relate to students' achievement and voluntary reading" (Elley 1992, p. 3). A detailed questionnaire was completed by all teachers of the students tested. Before presenting the design and content of the questionnaire, some information on countries, number of students and teachers are given in Table 2.1. As is shown there, two populations were studied, one involving 9-year-old students (Population A) and the other involving 14-year-old students (Population B).

The number of teachers and students varies across countries. The low number in FINLAND is due to the sampling conditions there. Earlier studies demonstrated relatively small differences between schools or classrooms as compared with the differences within schools or classrooms in FINLAND. In such a homogeneous educational system the required sample size is much lower than in a system with wide variations between schools (such as the UNITED STATES). In some countries a deliberate oversampling took place. For example, in IRELAND almost the full cohort was included in the study. In SWEDEN (Population A) all parallel classes in a sampled school were included in order to ensure more reliable comparisons between schools.

The response rate for answering the questions in the Teacher Questionnaire was generally quite high (well above 90 percent) with a few exceptional countries (BOTSWANA, INDONESIA, PORTUGAL, TRINIDAD AND TOBAGO, VENEZUELA and ZIMBABWE) where often 10 to 20 percent of the teachers did not answer the questions.

The Teacher Questionnaires

The main focus of the Teacher Questionnaire was on the teaching environment and instructional orientation. The Teacher Questionnaire for Population A included a total of 46 main questions, several of them being divided into many subquestions making up a total of some 160 variables. The variables were categorized into four main groups:

Table 2.1. The number of participating teachers and students at the two age levels in each country.

Country	9-year-olds		14-year-olds	
	Number of teachers	Number of students	Number of teachers	Number of students
Belgium/French	152	2708	145	2733
Botswana	---	---	274	4763
Canada/BC	161	2731	220	4889
Cyprus	319	1511	248	1422
Denmark	209	3543	207	3913
Finland	71	1552	83	1379
France	136	1865	136	2618
Germany/East	101	1983	100	1963
Germany/West	150	3106	197	4521
Greece	175	3609	147	3942
Hong Kong	167	3313	158	3160
Hungary	144	3010	144	3374
Iceland	283	4035	221	3855
Indonesia	174	3169	---	---
Ireland	122	2714	151	3643
Italy	154	2242	179	3089
Netherlands	99	1706	162	3748
New Zealand	176	3027	124	3135
Nigeria	---	---	122	2374
Norway	191	2487	138	2307
Philippines	---	---	244	9708
Portugal	167	2808	163	3429
Singapore	206	7399	142	4805
Slovenia	140	3300	139	3230
Spain	324	8230	318	8485
Sweden	234	4347	149	3669
Switzerland	227	3435	387	6520
Thailand	---	---	141	2749
Trinidad/Tobago	248	3684	208	3027
United States	300	6729	165	3476
Venezuela	162	4716	171	4326
Zimbabwe	---	---	143	2768
Total	4992	93,049	5526	100,365

1. *Teaching conditions*: class size, instructional time, language background, grouping, remedial needs, parental involvement, class-room resources, organization
2. *Teacher characteristics*: gender, training, experience, reading habits, and attitudes to reading and reading instruction

3. *Instructional strategies*: activities and methods
4. *Assessment*: forms and aspects covered

Most of the 9-year-olds had spent only a few years in school. In the questionnaire, therefore, many items concerned instructional procedures relevant to the beginning stages of teaching. Great care was taken to cover issues related to code and skill emphasis or to comprehension- or meaning-oriented teaching.

For Population B (14-year-olds), the Teacher Questionnaire was considerably reduced for two reasons. First, it was considered that in most cases the teachers for that age level had a less powerful influence on student achievement and reading habits. After all, the students had a school history of more than seven or eight years with many different teachers influencing their abilities and a life outside school with a multitude of factors operating on their reading development. Thus, the impact of the teacher in grade eight or nine who filled in the teacher questionnaire was expected to be rather limited (see Thorndike 1973). Second, due to limited resources it was decided to perform a multivariate analysis only for Population A. This priority was motivated by the expectation that factors influencing student achievement would be more easily identified at the lower age level. Thus, the short term policy implications of the study were expected to be stronger for the younger children. For the older age group a more descriptive and comparative analysis of the results was judged to be adequate. Such an analysis could be useful for generating more explanatory hypotheses about teaching and teaching conditions which could be tested in further investigations.

The Teacher Questionnaire for Population B was concerned with training, experience and reading habits. Issues on instruction strategies and classroom resources were also covered. A total of 28 questions were included covering 88 variables which could be categorized in the same way as for Population A. The main emphasis was on instructional orientations for promoting reading comprehension and voluntary reading.

In the construction of the questionnaires, the National Research Coordinators (NRCs) from the participating countries worked cooperatively to identify those indicators that were conceived, from experience or on the basis of previous research, to be important either for explaining differences among pupils, among classes or schools within countries, or among systems of education. Once the indicators had been identified, decisions were made on how many questions were needed to measure each indicator. An accompanying document was also produced for each questionnaire indicating the intent of the question and the international code to be used. Guidelines for translation were provided. Each question could be adapted within a system, but only in such a way that it would still yield valid information which could be coded according to the international code.

What Other Information Was Collected?

Questionnaires were also given to students and school principals. The students were asked questions about home circumstances, the language they typically speak, gender, home possessions and student possessions (as indicators of economic status), access to reading materials, homework, and voluntary reading at home and at school. The school questionnaire was completed by all the principals (headmasters) of the students tested. It included questions on school characteristics, enrollment, location, parental cooperation, library resources, staffing, reading policies, administration, the principal's experience, management style, etc.

In consultation with the National Advisory Committee, each NRC completed a National Case Study Questionnaire which included questions on national educational policy, school system, enrollment patterns, expenditure, economic conditions, language policy, curriculum in reading, access to reading materials, instructional time, etc.

Reading Achievement Test

The reading achievement test was a crucial part of the study. Three types of test materials were used at each age level:

1. *Narrative prose*: Continuous texts in which the writer's aim is to tell a story, whether fact or fiction. The story is often intended to entertain or involve the reader emotionally.
2. *Expository prose*: Continuous texts designed to describe, explain, or otherwise convey factual information or opinion to the reader.
3. *Documents*: Structured information displays presented in the form of charts, tables, maps, graphs, lists or sets of instructions.

For each of these domains a scale was constructed expressing the difficulty of each item and the ability of each student tested. For further technical details on test development and scale construction the reader is referred to the booklet on reading achievement (Elley 1992) and to the final main report from the study (Elley in press). It was possible to establish scales of reading ability that were valid across countries and which rendered cross-country comparisons possible and meaningful.

All countries administered the tests and questionnaires under standardized conditions to their target samples in or about the eighth month of the school year of 1991. Southern hemisphere countries gave their tests six months earlier.

The interpretations of the results on various teaching practices reported in this booklet often refer to the level of reading achievement of the different countries. Tables 2.2 and 2.3 present the scores. For each domain, the first

column reports the mean scaled score in each country. The international scale has a mean of 500 and a standard deviation of 100 (a measure of the variation of individual scores around the mean). Column two presents the standard error of sampling. Column three presents the student standard deviation of scores in each country.

Table 2.2. Mean student ability scores (with standard errors of sampling) for all domains arranged in order of overall achievement: Population A.

Country	Grade tested	Mean Age (in years)	Narrative		Expository		Documents	
			Mean (s.e.)	SD	Mean (s.e.)	SD	Mean (s.e.)	SD
Finland	3	9.7	568 (3.0)	83	569 (3.1)	81	569 (4.0)	88
United States	4	10.0	553 (3.1)	96	538 (2.6)	80	550 (2.7)	81
Sweden	3	9.8	536 (2.6)	100	542 (2.7)	112	539 (3.2)	106
France	4	10.1	532 (4.1)	93	533 (4.1)	84	527 (3.9)	81
Italy	4	9.9	533 (4.0)	88	538 (4.0)	95	517 (4.9)	92
New Zealand	5	10.0	534 (3.5)	102	531 (3.1)	93	521 (3.3)	92
Norway	3	9.8	525 (2.8)	102	528 (2.3)	103	519 (2.8)	101
Iceland*	3	9.8	518 (0.0)	95	517 (0.0)	101	519 (0.0)	91
Hong Kong	4	10.0	494 (4.1)	87	503 (3.4)	72	554 (4.2)	89
Singapore	3	9.3	521 (1.1)	91	519 (1.0)	75	504 (1.0)	78
Switzerland	3	9.7	506 (2.6)	92	507 (2.7)	100	522 (2.8)	96
Ireland	4	9.3	518 (3.7)	94	514 (3.2)	89	495 (3.8)	84
Belgium/Fr	4	9.8	510 (3.3)	92	505 (2.8)	85	506 (3.5)	88
Greece	4	9.3	514 (3.8)	88	511 (3.6)	85	488 (3.8)	85
Spain	4	10.0	497 (2.4)	86	505 (2.3)	92	509 (2.7)	89
Germany/W	3	9.4	491 (2.8)	93	497 (2.9)	104	520 (3.2)	94
Canada/BC	3	8.9	502 (3.5)	96	499 (2.7)	94	500 (2.8)	86
Germany/E	3	9.5	482 (4.2)	93	493 (3.6)	103	522 (5.0)	96
Hungary	3	9.3	496 (2.9)	80	493 (3.1)	101	509 (3.5)	89
Slovenia	3	9.7	502 (2.7)	94	489 (2.5)	93	503 (2.5)	82
Netherlands	3	9.2	494 (3.3)	85	480 (3.4)	87	481 (3.9)	82
Cyprus	4	9.8	492 (2.4)	92	475 (2.3)	91	476 (2.1)	81
Portugal	4	10.4	483 (3.3)	81	480 (3.0)	84	471 (4.5)	92
Denmark	3	9.8	463 (3.4)	119	467 (3.5)	127	496 (3.6)	125
Trinidad/Tobago	4	9.6	455 (3.6)	91	458 (3.4)	93	440 (3.3)	82
Indonesia	4	10.8	402 (2.8)	66	411 (3.2)	77	369 (3.0)	66
Venezuela	4	10.1	378 (3.2)	86	396 (3.3)	91	374 (3.7)	84

*Iceland tested all students, therefore no standard error was calculated.

s.e. = 1 standard error of sampling

General Outline of the Report

In presenting the results to be covered in this booklet, it is the context of teaching in the participating countries that is described first. This includes dominating school conditions such as average class size, instructional time, student home

Table 2.3. Mean student ability scores (with standard errors of sampling) for all domains arranged in order of overall achievement: Population B.

Country	Grade tested	Mean age (in years)	Narrative		Expository		Documents	
			Mean (s.e.)	SD	Mean (s.e.)	SD	Mean (s.e.)	SD
Finland	8	14.7	559 (2.8)	84	541 (2.2)	71	580 (2.5)	82
France	9	15.4	556 (4.2)	86	546 (4.3)	84	544 (4.2)	77
Sweden	8	14.8	556 (2.6)	93	533 (2.4)	91	550 (2.4)	90
New Zealand	10	15.0	547 (5.7)	104	535 (5.7)	105	552 (5.3)	98
Hungary	8	14.1	530 (3.1)	81	536 (3.6)	91	542 (3.2)	82
Iceland	8	14.8	550 (0.0)	91	548 (0.0)	100	509 (0.0)	77
Switzerland	8	14.9	534 (3.4)	90	525 (3.2)	87	549 (3.0)	82
Hong Kong	9	15.2	509 (3.7)	72	540 (3.8)	79	557 (3.8)	76
United States	9	15.0	539 (4.9)	98	539 (5.6)	107	528 (4.0)	84
Singapore	8	14.4	530 (1.1)	73	539 (1.2)	82	533 (1.1)	74
Slovenia	8	14.7	534 (2.6)	76	525 (2.2)	73	537 (2.2)	74
Germany/E	8	14.4	512 (3.9)	90	523 (3.5)	87	543 (2.9)	81
Denmark	8	14.8	517 (2.0)	83	524 (2.2)	94	532 (2.1)	88
Portugal	9	15.6	523 (2.5)	71	523 (3.4)	79	523 (3.4)	67
Canada/BC	8	13.9	526 (3.1)	94	516 (3.1)	97	522 (2.7)	88
Germany/W	8	14.6	514 (4.9)	95	521 (4.5)	92	532 (3.9)	82
Norway	8	14.8	515 (2.1)	76	520 (2.4)	86	512 (2.4)	82
Italy	8	14.1	520 (3.6)	88	524 (3.2)	85	501 (3.3)	78
Netherlands	8	14.3	506 (4.8)	88	503 (4.7)	83	533 (5.3)	90
Ireland	9	14.5	510 (5.3)	93	505 (5.3)	94	518 (4.9)	90
Greece	9	14.4	526 (2.9)	75	508 (3.1)	84	493 (2.6)	69
Cyprus	9	14.8	516 (2.2)	82	492 (2.4)	91	482 (2.0)	74
Spain	8	14.2	500 (3.0)	84	495 (2.6)	79	475 (2.0)	64
Belgium/Fr	8	14.3	484 (5.1)	95	477 (4.8)	89	483 (4.7)	82
Trinidad/Tobago	9	14.4	482 (1.7)	96	485 (1.8)	100	472 (1.7)	92
Thailand*	9	15.2	468 (6.6)	88	486 (5.9)	87	478 (6.2)	88
Philippines	8	14.5	421 (3.6)	71	439 (4.1)	78	430 (3.9)	72
Venezuela	9	15.5	407 (2.9)	67	433 (3.3)	80	412 (3.0)	70
Nigeria†*	9	15.3	402 (---)	69	406 (---)	73	394 (---)	81
Zimbabwe*	9	15.5	367 (3.3)	64	374 (3.6)	70	373 (4.6)	83
Botswana	7	14.7	340 (1.6)	53	339 (1.9)	58	312 (2.4)	69

† Insufficient data to calculate the Design Effect.

* Sampling response rates of schools was below 80 percent.

s.e. = 1 standard error of sampling

language, textbooks per student. The second section treats some basic characteristics of the teachers: their sex, their teaching experience, their education, and their reading habits.

Following these background sections, the major part of this report presents a description of how reading is taught in the different countries at the two age levels. The various teaching practices are also related to teacher characteristics and teaching conditions. In a separate section the relationship between teaching and reading achievement is investigated. Finally, for Population A the extreme

classrooms in terms of overachievement and underachievement are examined to see if any invariant pattern across countries can be detected.

Figures 2.1 and 2.2 summarize and organize the various steps in the presentation of results. They also serve as a general frame of reference or conceptual model for the teaching part of the IEA Reading Literacy Study.

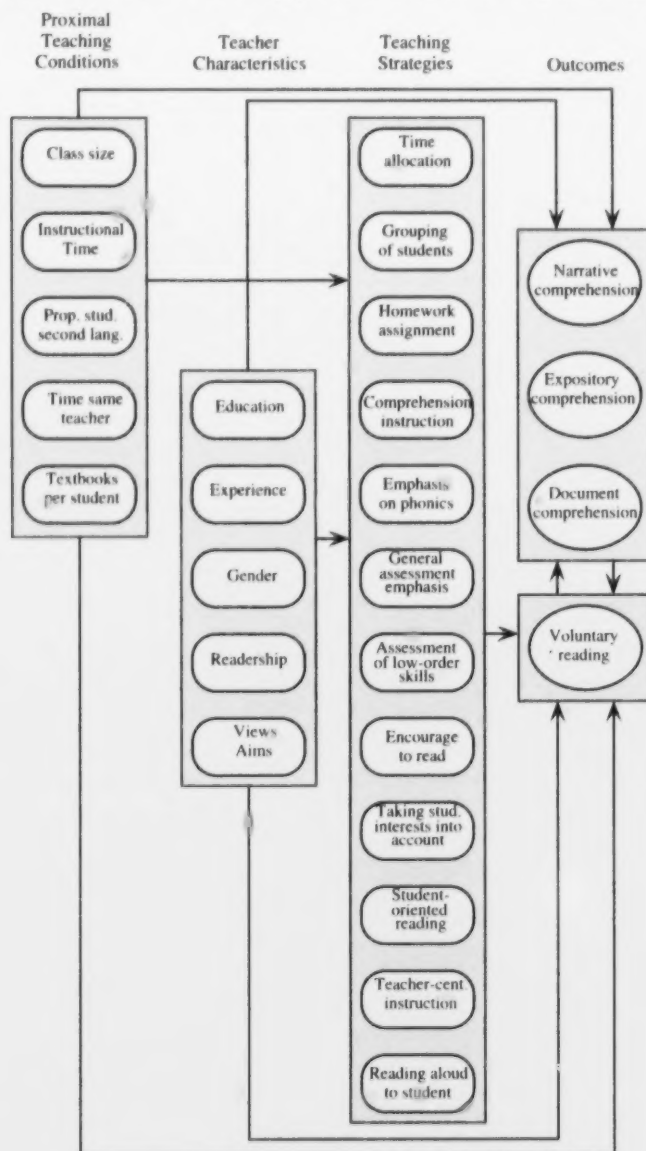


Figure 2.1. A conceptual framework for the study of the teaching of reading: Population A.

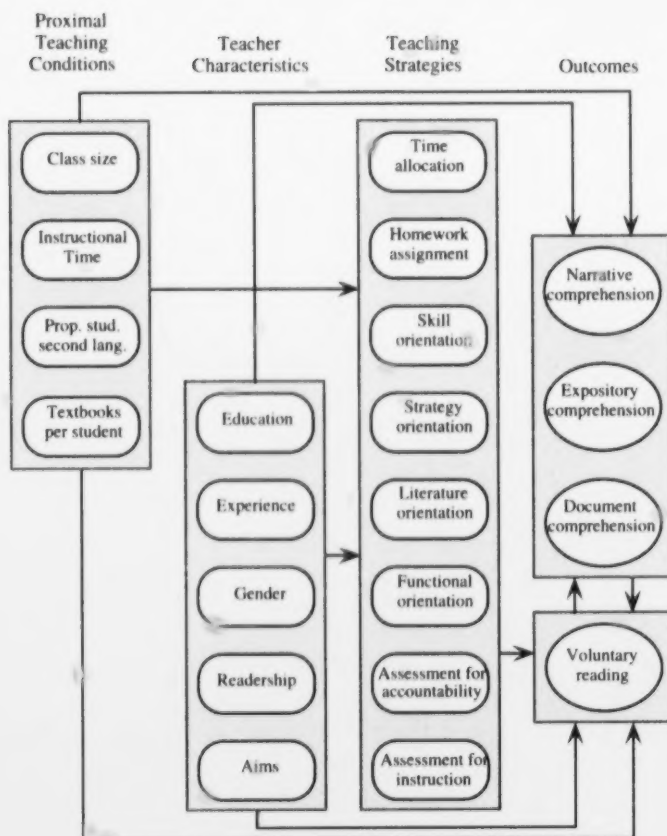


Figure 2.2. A conceptual framework for the study of the teaching of reading: Population B.

CHAPTER THREE

THE PROXIMAL CONDITIONS OF TEACHING

Teaching is, of course, always undertaken in a context that can be described on various levels – from the broadest possible socio-cultural, political and historical perspective down to the daily practical conditions at the classroom level. In the first booklet of this series (Elly 1992) the cultural perspective was considered in the cross-national comparisons. School conditions and home resources are analyzed in a booklet on effective schools (Postlethwaite and Ross 1992). Here the perspective will be restricted to a simple description of the proximal classroom conditions under which reading instruction takes place, such as, for example, class size, the sex distribution of students, the proportion of students speaking a language other than the test language, the proportion of students in need of remedial help, textbooks available, instructional time, and how long the teacher has been teaching the class tested.

When teaching strategies across countries are compared, and when the various instructional practices are related to achievement, comparisons should also be done so that the external classroom conditions are kept constant (i.e., only teachers with the same class size, the same type of students, etc., are compared). Instructional practices interact with external factors in a complicated way. For example, a class with many students speaking a different home language might invoke quite different teacher behaviors and teaching attitudes than a more homogeneous class would. Thus, in order to reveal more basic or pure differences in teaching strategies the external classroom conditions should be statistically controlled.

Before teaching strategies are analyzed and compared, the average external classroom conditions in different countries will be described as well as the kinds of teachers in terms of gender, education, experience, reading habits and attitudes towards reading instruction that are typically found in the different countries. We will also see how teaching conditions and teacher characteristics are related to student achievement *across* countries and *within* countries.

Class Size

A school class with 45 students is indeed a very different educational environment from a class with ten students. When teaching is compared across countries, the average class size should then be taken into account. But it is, of course, also important to examine the direct effect of class size on achievement. Figures 3.1 and 3.2 present the average class size in the participating countries for the two populations tested.

In Population A the average number of students per class varies from 16 in ITALY to 38 in SINGAPORE. In Population B the range is from 16 students per class in SWITZERLAND to 47 in the PHILIPPINES. The conditions for reading instruction

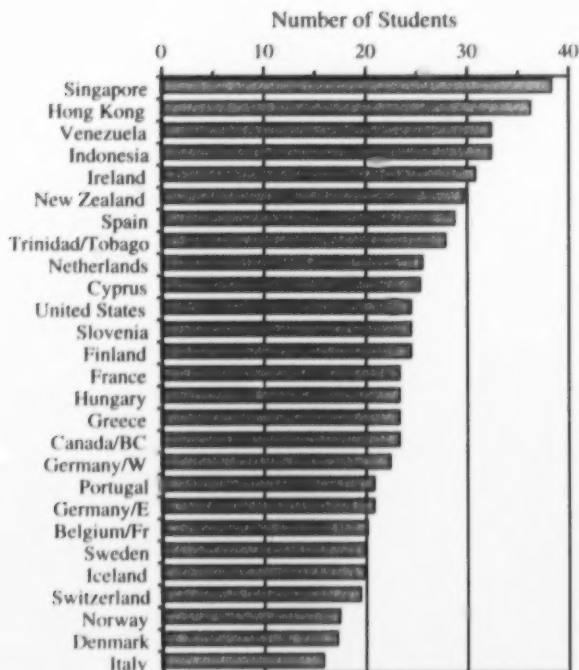


Figure 3.1. Between-country variation in average class size: Population A

in these extreme cases, of course, must be very different. In both populations, the Nordic countries and SWITZERLAND have typically rather small classes, whereas the developing countries, as well as SINGAPORE and HONG KONG all have large groups in both populations. Comparatively large classes are also found in NEW ZEALAND, SPAIN and IRELAND.

As reported in the first booklet of this series (Elley 1992), it has not been possible to demonstrate any clear relationship between class size and student achievement, especially when one controls for differences in wealth between countries. However, it might still be possible to demonstrate the impact of class size on achievement within some countries. Significant positive correlations with achievement in Population A were found in CANADA (BC), GREECE, HONG KONG, HUNGARY, INDONESIA, the NETHERLANDS, PORTUGAL, SPAIN, and SWITZERLAND. Negative correlations, indicating an advantage for small classes, were found in FINLAND, SINGAPORE and VENEZUELA. In Population B positive correlations were found in BELGIUM (FRENCH), DENMARK, FRANCE, GREECE, HUNGARY,

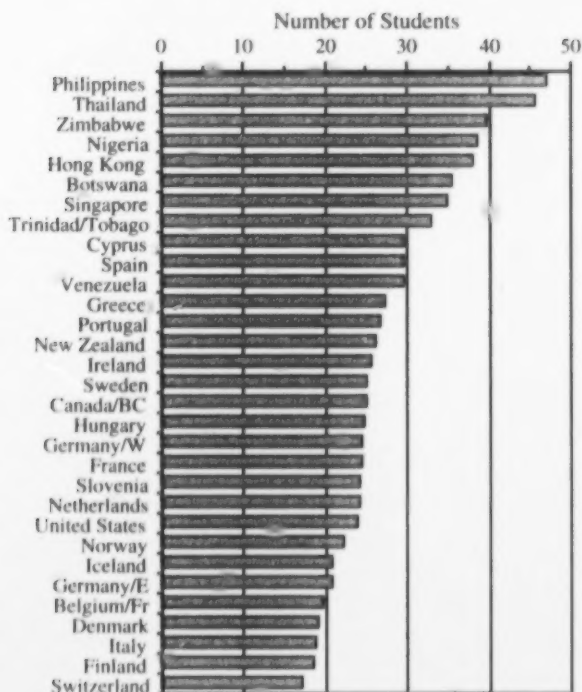


Figure 3.2. Between-country variation in average class size: Population B

ICELAND, IRELAND, the NETHERLANDS, NEW ZEALAND, SLOVENIA, SPAIN, SWITZERLAND, and TRINIDAD AND TOBAGO. The size of these correlations varied from .20 to .45, and all indicated that large classes are accompanied by high student achievement.

Behind the correlation between class size and achievement there is certainly some third factor, such as wealth or community type (urban/rural), which is related to both achievement and class size. Another possibility, which might account for a positive correlation, is that the class size is deliberately reduced when many poor students (e.g., immigrants) come to a school. Since the classes within schools were drawn at random, it may be that some of the smaller classes in the sample are those for the less able students who need more individual attention. Thus we cannot conclude that larger classes would lead to higher achievement. Certainly, small classes are preferred by most teachers, although clear-cut evidence for the effectiveness of a reduction of class size is hard to obtain. Too many co-varying factors tend to obscure the picture.

Percentage of Students Speaking a Language Other Than the Test Language

In Figure 3.3 and 3.4 the countries are ranked according to the average proportion of students in each class speaking a different language from the test language or instructional language as reported by the teacher. At the 9-year-old level, the most extreme countries were SINGAPORE (78 percent) and INDONESIA (47 percent). Among the European countries substantial proportions were reported for SWITZERLAND, GERMANY (WEST), SLOVENIA, the NETHERLANDS, FRANCE and BELGIUM (FRENCH). A very small proportion of students with a different home language was found in FINLAND, GERMANY (EAST), HUNGARY and in the Mediterranean countries. The small proportion reported by the UNITED STATES is related to the fact that many second-language students were deliberately excluded from the sample. Among the 14-year-olds the tendency was the same. Additional countries with high proportions of students speaking a language other than the test language were ZIMBABWE, BOTSWANA, THAILAND and the PHILIPPINES.

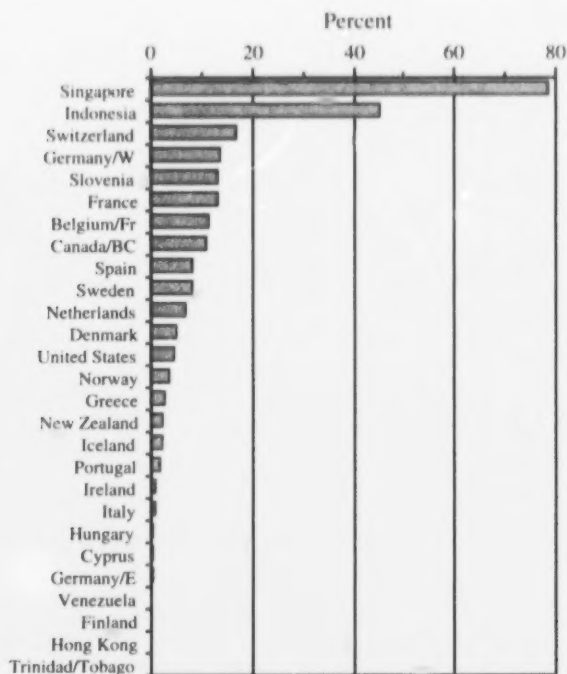


Figure 3.3. Between-country variation in average percentage of students in a class speaking a language other than the test language: Population A

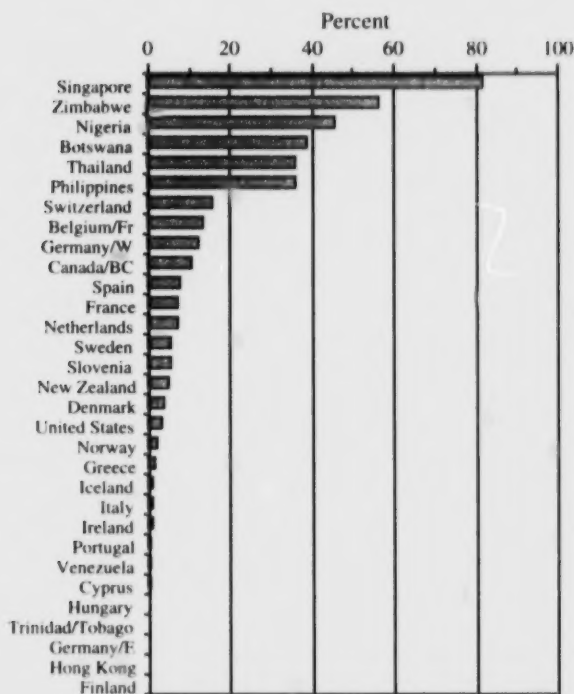


Figure 3.4. Between-country variation in average percent of students in a class speaking a language other than the test language: Population B

In Elley (1992), the reading achievement of second language students was compared to the achievement of native language speakers. In most countries there was a considerable gap to the disadvantage of non-native language speakers. For example, the gap at the Population A level between the two language groups was 70 points in NEW ZEALAND, 58 points in SWEDEN, and 56 points in NORWAY. Among the older students, the gap was even wider, with 81 points for NEW ZEALAND, 75 points for GERMANY (WEST) and 61 points for the UNITED STATES (50 points on the international scale corresponded to half the standard deviation). When the average proportion of second language students in each country was correlated with the average achievement levels of the countries, a small and insignificant negative correlation was obtained (-.16). Thus, some of the high-achieving countries have a substantial proportion of second language students (SINGAPORE, FRANCE, SWEDEN, SWITZERLAND) whereas some low-achieving countries have very few such students (VENEZUELA, TRINIDAD AND TOBAGO, CYPRUS).

The relationship to achievement became clearer when the correlation with achievement were computed within countries. In Population A, significant negative correlations were found in BELGIUM (FRENCH), DENMARK, FRANCE, GERMANY (WEST), IRELAND, the NETHERLANDS, NORWAY, SINGAPORE, SWEDEN, and the UNITED STATES. In Population B the countries with significant negative correlations were BELGIUM (FRENCH), the NETHERLANDS, SINGAPORE, SWEDEN, SWITZERLAND, TRINIDAD AND TOBAGO, and the UNITED STATES. In these cases, classes with more second language students had lower achievement levels.

It is likely that the teaching of reading in a linguistically heterogeneous class involves different and perhaps greater demands than in a more homogeneous class. This should be kept in mind when instructional strategies are compared across countries.

Instructional Time

Another contextual factor which might imply constraints on instructional practices is instructional time. In the Teacher Questionnaire for Population A the issue of instructional time was divided into three questions: one concerned the total time of instruction per week, a second question focused on the time for general instruction in the test language (including literature, reading, writing, speaking, listening and other communication skills), and a third question concerned the time allocated specifically to reading instruction. At the Population B level only the first two questions were asked.

Figures 3.5 and 3.6 present the results. The countries are ordered according to the total time in hours of instruction per week. In Population A the leading countries were the UNITED STATES, ITALY, and the NETHERLANDS. Short working weeks in school were typically found in DENMARK, ICELAND, NORWAY and SLOVENIA. In Population B long weeks were reported in ITALY, the PHILIPPINES and FRANCE, whereas particularly short weeks were reported in ZIMBABWE, TRINIDAD AND TOBAGO and THAILAND.

The time for reading instruction and general instruction in the test language is a critical issue here. In Population A, CANADA (BC), the UNITED STATES and NEW ZEALAND spent more time than most other countries on reading and language instruction. Thus, when frequency of teaching practices is considered across countries, the time available for reading instruction should be considered. Although the Scandinavian countries have a late school start, they still spent less time on reading instruction than did most other countries. Yet the achievement level is generally high in these countries. More critical than the amount of time assigned to reading instruction is clearly how that time is spent.

Within countries in Population A, significant positive correlations between *instructional time* and student achievement were found in CYPRUS, FRANCE, and SPAIN. The time for *general instruction in the test language* was negatively correlated with achievement in CANADA (BC) and SINGAPORE. The obvious interpretation is that poor readers tend to get more instruction than good readers

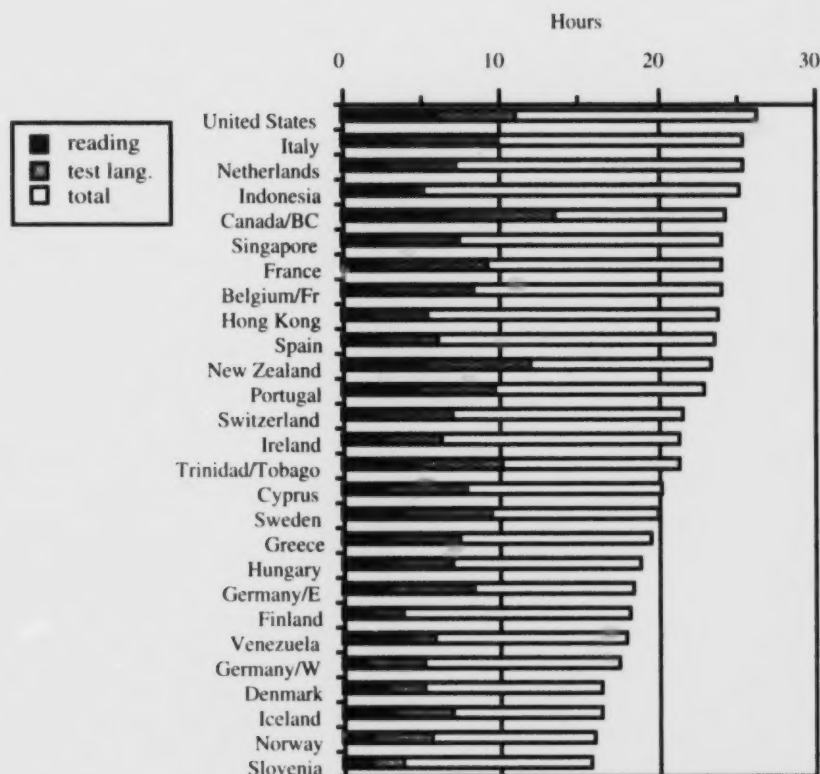


Figure 3.5. Between-country variation in average amount of instructional time: Population A

in these countries. Positive correlations were found in ITALY. The time allocated for the teaching and practice of reading had again a negative correlation with achievement not only in CANADA (BC) but also in FINLAND and SWITZERLAND. The only positive correlation was observed in NEW ZEALAND.

In Population B, significant positive correlations between *time of instruction per week* and student achievement were found in FRANCE, GREECE, PORTUGAL, SPAIN and SWITZERLAND. A rather strong negative correlation was found in CANADA (BC) (-.50) which cannot readily be explained. Significant positive correlations between the time allocated for *general teaching of test language skills* and student achievement were observed only in CANADA (BC).

The rather weak and contradictory findings at the country level might reflect the small variation in time schedules within countries. The limited correlation between time of teaching and achievement when we look at country means tells us that the time factor per se is not a very critical factor in explaining differences in reading achievement.

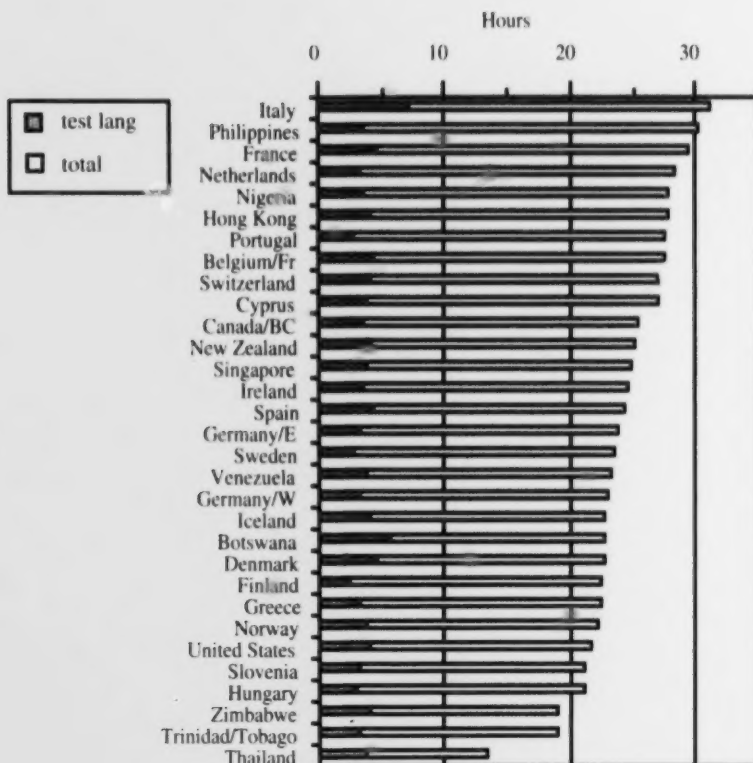


Figure 3.6. Between-country variation in average amount of instructional time: Population B

How Long has the Class Been Taught by the Same Teacher?

In some countries the students meet a new reading teacher every year, whereas in others the teacher follows the same class over a number of successive school years. In the first case the teacher has the opportunity to develop real expertise in handling a specific grade. In the second case, the teacher gets to know each individual child thoroughly and is thus able to adjust the instruction to individual needs. On the other hand, the frequency with which the teacher meets beginning students might be low, perhaps too low to allow the development of real expertise in the critical stage of beginning reading. The issue of how long the class has been taught by the same teacher is, of course, more relevant as a teaching condition for Population A.

Figure 3.7 shows that teachers in ITALY, FRANCE, PORTUGAL, DENMARK and SWEDEN on the average have stayed longest with their classes in Population A. In the UNITED STATES, CANADA (BC), NEW ZEALAND, IRELAND, TRINIDAD AND

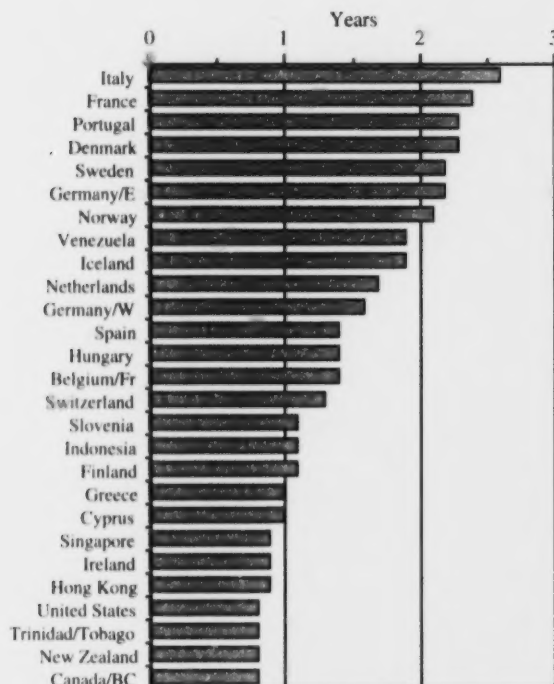


Figure 3.7. Between-country variation in average time teachers have stayed with the class tested: Population A

TOBAGO, HONG KONG and SINGAPORE the teachers have taught the same class for only about a year. Across countries there is a weak tendency showing that the time of teaching the class is positively related to achievement ($r=.16$). Within some countries, however, significant correlations were observed. In Population A, positive correlations were found in GREECE, ICELAND, and NEW ZEALAND, whereas negative correlations were found in CANADA (BC). One factor that might create negative relationships is the increased turnover rate of teachers in unstable or poor areas. Brighter students might also have an increased tendency to change schools when the conditions are less satisfactory.

Number of Textbooks per Student in Each Class

It is assumed that the general resource level of a classroom (e.g., access to material, space and books) imposes constraints on how reading instruction can be realized. In this study, the number of textbooks per student has been chosen as an indicator of the general resource level of a class. Figures 3.8 and 3.9 show that this number varies across countries in both populations. As expected,

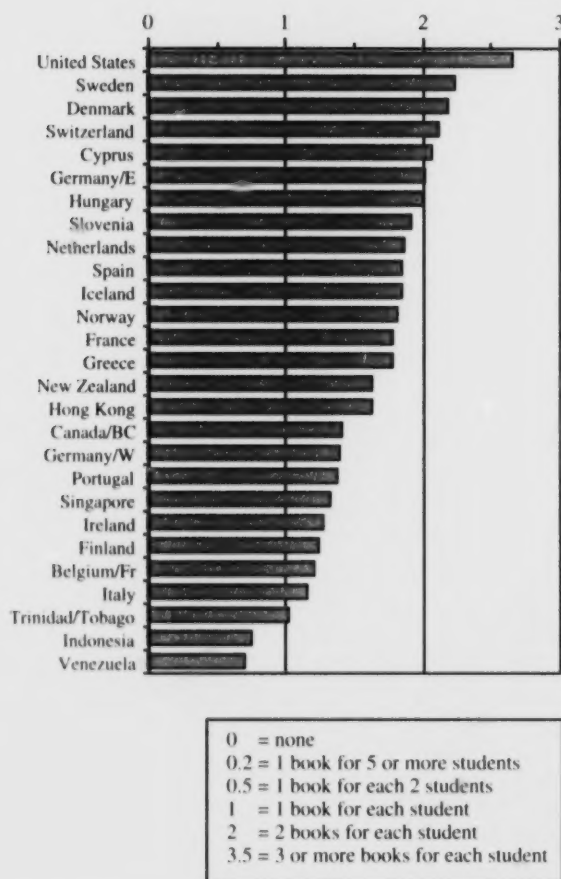


Figure 3.8. Between-country variation in average number of textbooks per student: Population A

wealthy countries like the UNITED STATES, SWEDEN, SWITZERLAND, DENMARK, ICELAND and the NETHERLANDS have a high rank whereas many of the developing countries have low ranks. The high level of provision reported in CYPRUS in Population A and in BOTSWANA in Population B might indicate a *compliance effect* in answering the questionnaire. FINLAND's low position in Population A is somewhat surprising considering the high level of wealth and achievement of that country. The general trend in the between-country analysis is, however, a rather strong positive correlation between the average number of textbooks and the achievement level (.60 at Population A). This correlation almost disappears, however, after adjustment for wealth and social conditions (see Elley 1992).

Within countries in Population A, significant positive correlations between the number of textbooks and student achievement were found only in HUNGARY,

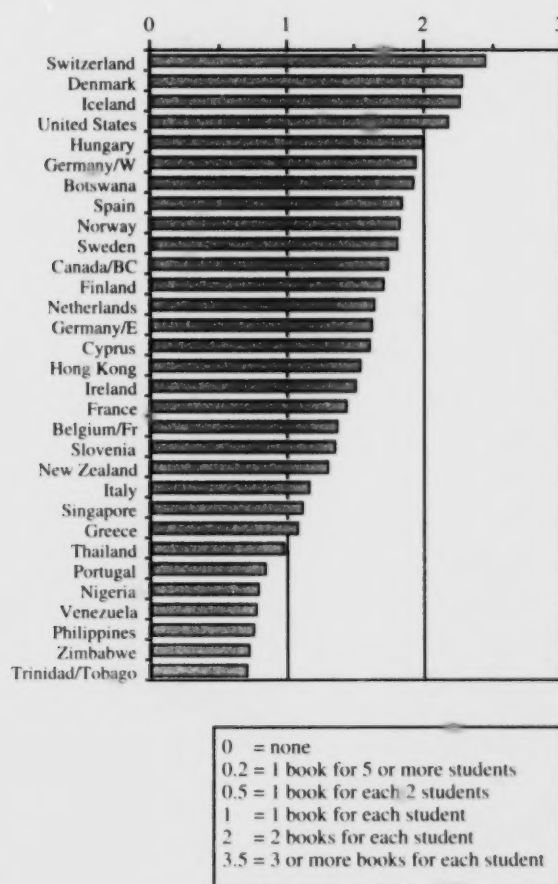


Figure 3.9. Between-country variation in average number of textbooks per student: Population B

INDONESIA and TRINIDAD AND TOBAGO. Surprisingly, a negative correlation was found in GREECE, which illustrates the difficulty of interpreting correlations in terms of causality. Few would assume that many textbooks are harmful to students. The alternative, that poor students are supplied with more textbooks as a remedial measure, is more plausible. A third possibility is that teachers of poor students in some countries tend to paint a too positive picture of the classroom conditions when responding to questionnaire items.

In Population B, significant positive correlations were found in BELGIUM (FRENCH), HONG KONG, ITALY, SWITZERLAND, TRINIDAD AND TOBAGO (close to .50) and ZIMBABWE. No negative correlation was observed.

Summary

The main findings reported in this chapter on proximal teaching conditions were:

- Average class size varies between countries from 16 to 47.
- Within countries, mostly positive correlations between class size and achievement were observed. Thus, there is no evidence here that small classes are better educational environments than large classes.
- The proportion of students speaking a language different from the test language is assumed to influence the teaching conditions in a classroom. There are wide variations between countries in this respect. The achievement level in classes with many students speaking a different language is generally lower than in linguistically homogeneous classes.
- Neither instructional time in general, nor more specific time allocated for reading instruction had a demonstrable effect on achievement.
- The number of years the teacher has spent with a class varies across countries. However, this variation does not play any important role as an explanation of performance differences.
- The number of textbooks per student in a class was assumed to be a relevant indicator of the resource level of the classroom. Wide variations between countries were observed. At the between-country level the correlation with student achievement is high.

CHAPTER FOUR

TEACHER CHARACTERISTICS

What kind of teachers are responsible for reading instruction around the world? How do they vary across countries in terms of education, experience, gender, reading habits, and attitudes to the aims of instruction? Is there any direct and simple relationship between certain teacher characteristics and student achievement? For example, does the teacher's gender have any influence on student achievement? Is it better for boys to have male teachers and for girls to have female teachers, or is a mismatch between teacher sex and student sex to be preferred? Is there any relationship between teaching experience and how the teachers respond to the questions on teaching behavior? These are some of the questions to be answered in this chapter.

Education

The number of years teachers have spent acquiring their education varies considerably across countries. To some extent these variations reflect differences in how the teaching profession is valued in different countries. Policymakers generally assume that a more prolonged education will create more competent teachers and higher teaching quality.

The pattern of teacher education varies considerably across countries. In some cases, teacher education is an integral part of postsecondary education, either at universities or at special teachers' colleges. In other countries, university studies oriented towards specific disciplines precede the specific teacher training. Still, the total postsecondary study period is regarded as a preparation for the teaching profession.

The varying patterns and the varying interpretations of the concept of teacher education make it difficult to compare the length of education across countries. In addition, basic changes of teacher education have taken place in several countries over the past decades, and the teachers involved in the present study vary considerably in years of experience. Thus, teacher education and teacher experience may be expected to show a strong covariation in many places. Older teachers had a different form of training from their younger colleagues. So, with reference to the problems raised here, it was decided not to report further details on teacher education in this chapter.

Experience

Teaching is certainly a most demanding profession, involving skill in management and fast decision making, independent judgment, patience, empathy, communication skill, careful planning, stress tolerance, deep subject knowl-

edge and psychological insight. A high level of teaching expertise can certainly not be acquired within only a few years of practical teaching experience. One would therefore expect a relationship between experience and student achievement.

Figures 4.1 and 4.2 present the average number of years of teaching experience reported by the teachers in each country. As can be seen, high scoring countries are found at all levels of experience (e.g., SWEDEN and FRANCE in the upper half at both populations and the UNITED STATES, NEW ZEALAND and ICELAND in the lower half). At the national level, however, some significant positive correlations between teaching experience and achievement can be found (CANADA (BC), GREECE, INDONESIA, NORWAY, PORTUGAL, SWEDEN, and the UNITED STATES in Population A and BELGIUM (FRENCH), GREECE, NORWAY and ZIMBABWE in Population B). No significant negative correlations were found.

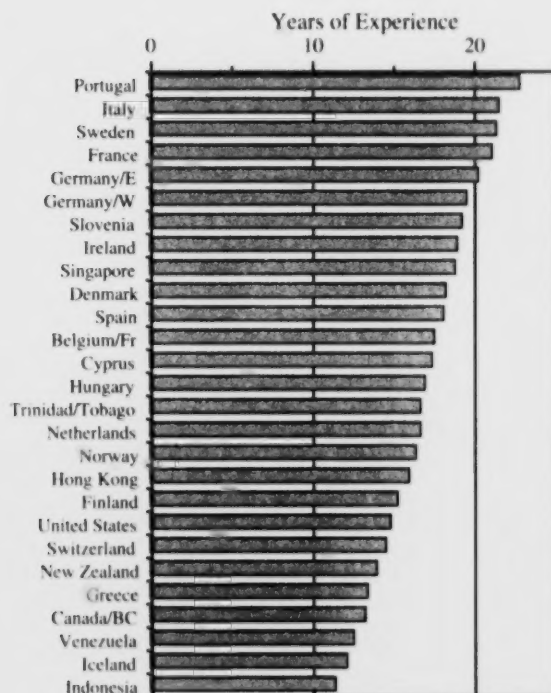


Figure 4.1. Between-country variation in average number of years of teaching experience in Population A

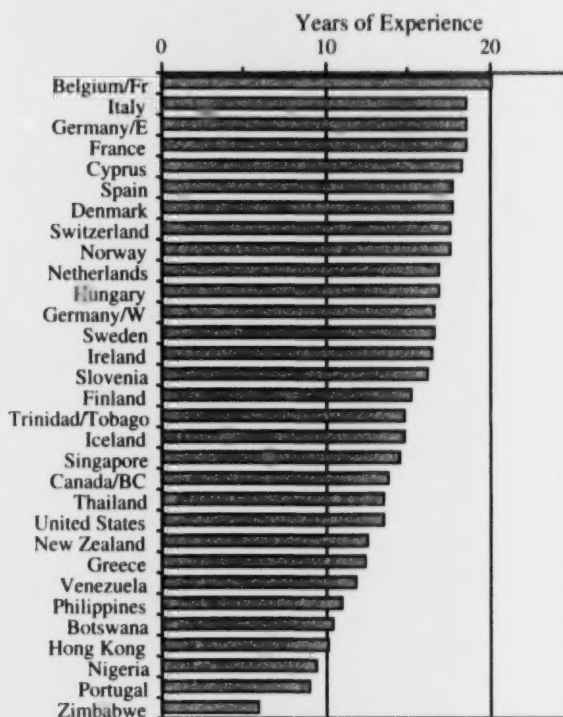


Figure 4.2. Between-country variation in average number of years of teaching experience in Population B

The relationship between teaching experience and instructional behavior

The responses to a large number of questions on teaching practices covaried with teaching experience. However, the direction of the relationship was often different in different countries. Each question in the teacher questionnaire which related to teaching behaviors and teaching attitudes was broken down by teaching experience forming three groups: (1) less than 5 years of teaching experience, (2) between 5 and 20 years, and (3) more than 20 years of experience.

In Population A older teachers tended to have their students deal with phonics more often than less experienced teachers. This tendency was very clear in seven countries (CANADA (BC), DENMARK, FRANCE, HUNGARY, PORTUGAL, SLOVENIA and SWITZERLAND). In FINLAND the tendency went in the other direction. In nine out of ten countries with significant relationships, older teachers paid more attention to word attack skills than younger teachers. The exceptional

country here was SWEDEN, possibly explained by the fact that the concept of word attack is largely unknown among Swedish teachers.

More experienced teachers also tended to have their students learn vocabulary from text reading, study the style and structure of texts and compare pictures and text in stories. Younger teachers in CANADA (BC), CYPRUS, PORTUGAL, SPAIN and TRINIDAD AND TOBAGO reported more often than older teachers that they wanted to develop critical thinking among their students. In FRANCE and GERMANY (EAST) this was more a concern of older teachers. In eight countries there was a significant and consistent relationship between experience and using texts which gradually increase in difficulty.

In DENMARK, FINLAND, the NETHERLANDS and SLOVENIA younger teachers reported more often than older teachers that they read aloud to the students which might indicate that they pay more attention to the affective reading. Young teachers also tended to use self-prepared teaching materials more often, especially in FINLAND, SWEDEN, NEW ZEALAND, GERMANY (WEST) and CYPRUS. Older teachers in some countries tended to emphasize accuracy and wanted their students to read each word correctly (CANADA (BC), FRANCE, GERMANY (WEST), the UNITED STATES, VENEZUELA, SLOVENIA). They also tended to assess the students' phonics skills more often than younger teachers in the countries where significant relationships were found (FINLAND, ICELAND, PORTUGAL, SWITZERLAND and the UNITED STATES).

To summarize this somewhat inconsistent picture of the role of teaching experience for teaching behavior in Population A, the emergent tendency seems to be that, at least in some industrial countries, younger teachers report more "modern" practices, whereas older teachers tend to be more traditional, emphasizing phonics and accuracy.

The number of questions asked about teaching practices was less in Population B. Some consistencies were found, though. In 18 countries a clear relationship between experience and the use of multiple choice questions as a way of assessing reading performance was observed. In 13 of these countries, teachers with the shortest experience tended to use multiple-choice questions more often than more experienced teachers. On the other hand, older teachers tended to use open-ended questions and written essays in response to literature more often than less experienced teachers. Thus, there is a trend towards more use of multiple-choice questions among younger teachers, motivated perhaps by increasing concerns about accountability and external assessment policies.

Although the younger teachers seemed to use more formal assessment methods in many countries, they expressed attitudes towards the aims of reading instruction which were more student-oriented. Thus, for example, younger teachers in many countries gave a higher priority to the aim of *developing a lasting interest in reading* than older teachers did, especially in CANADA (BC), the UNITED STATES, FINLAND, ICELAND and the PHILIPPINES. Younger teachers also tended to give a high rank to the aim of *developing the students' research and study skills* (NORWAY, SWEDEN, SWITZERLAND, CYPRUS, SPAIN and ZIMBABWE).

Obviously, teaching experience is not a simple unidimensional factor. The higher expertise in classroom management among teachers with long experience might well be offset by the advantage of being young, implying a smaller generation gap between them and their students, facilitating contact and empathy.

Gender Differences

In both populations, countries varied in the proportion of female teachers in their schools. Almost all Population A teachers were female in SLOVENIA, HUNGARY, GERMANY (EAST), SWEDEN, ITALY and PORTUGAL, whereas less than half of the teachers in INDONESIA and the NETHERLANDS were female at that level. In Population B there was still a strong predominance of female teachers in SLOVENIA and HUNGARY. Less than half of the teachers were female in SWITZERLAND, the NETHERLANDS, ZIMBABWE, ICELAND, CANADA (BC), GERMANY (WEST) and BOTSWANA. The female dominance has decreased somewhat from Population A to Population B. Figures 4.3 and 4.4 present the proportion of female teachers for each country in the two populations.

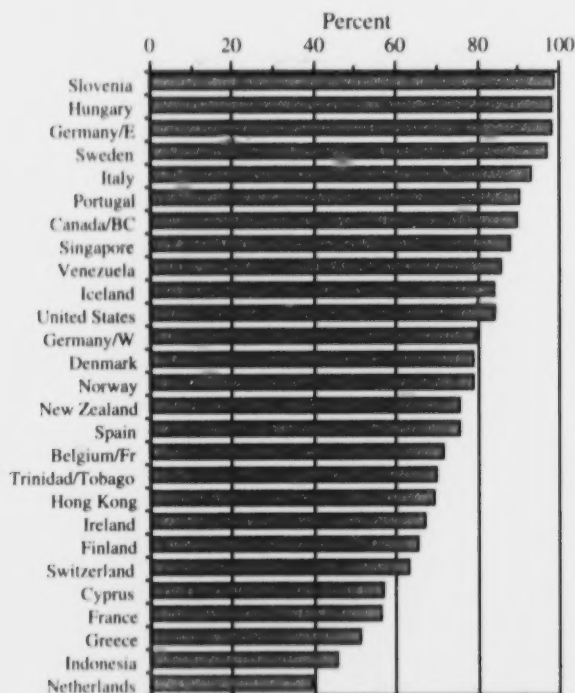


Figure 4.3. Between-country variation in proportion of female teachers in Population A

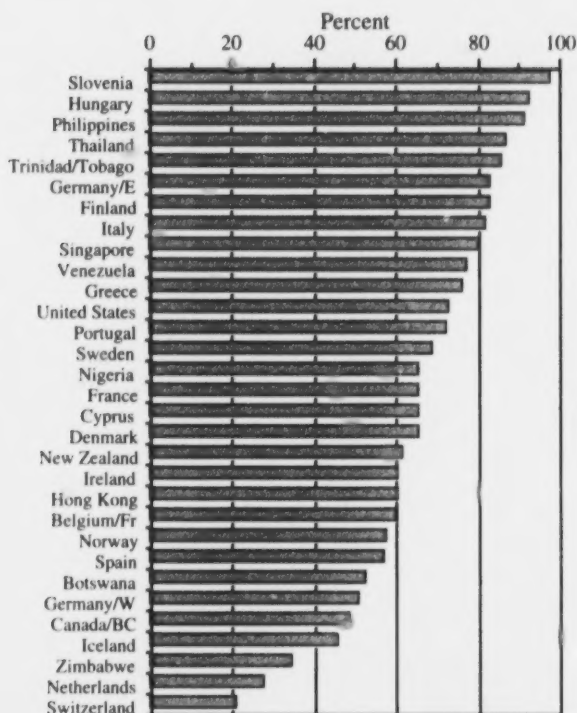


Figure 4.4. Between-country variation in proportion of female teachers in Population B

Are female teachers better than male teachers?

There was a weak tendency showing that higher average reading scores were obtained in education systems with a high proportion of female teachers. When the whole international data set was analyzed, a significant difference between female and male teachers was obtained.

At the within-country level, female teachers significantly outperformed male teachers in several countries. In Population A there were ten countries with strongly significant differences ($p < 0.001$) between female and male teachers as to how well their students performed on the reading tests (CANADA (BC), CYPRUS, GREECE, HONG KONG, ICELAND, INDONESIA, SPAIN, SWEDEN, TRINIDAD AND TOBAGO and VENEZUELA), and in all cases, female teachers had better students. In Population B significant differences were obtained in eight countries. Female superiority was observed in HONG KONG, the NETHERLANDS, SINGAPORE, SPAIN, SWITZERLAND, and ZIMBABWE, whereas male superiority was found only in GREECE and NEW ZEALAND.

Thus, in many countries students taught by females scored higher than students taught by males, especially at lower grade levels. No simple explana-

tion of this difference can be offered here. In each country possible differences in recruitment to the profession and other differences related to tradition and sex roles have to be further explored.

Gender match between students and teachers

An interesting question which is further analyzed in the booklet on gender differences in this series (Wagemaker et al. in press) is whether a gender match between teacher and student is better than a mismatch. Is there an advantage for boys to have male teachers and for girls to have female teachers?

When the whole international data set was analyzed together in a multiple regression with gender as a dummy variable, a significant interaction was obtained indicating a weak gender match advantage. However, even very small tendencies become statistically significant when they are based on an enormously large number of observations.

On the country level, the interaction was absent in a majority of cases. In Population A significant interaction was observed only in three countries (IRELAND, SINGAPORE and SPAIN). Figure 4.5 summarizes the average result in the three countries and shows that girls have a higher performance when they have a female teacher, whereas boys tend to do better with male teachers.

In Population B significant interactions were obtained in five countries (CANADA (BC), NEW ZEALAND, TRINIDAD AND TOBAGO, and again IRELAND and

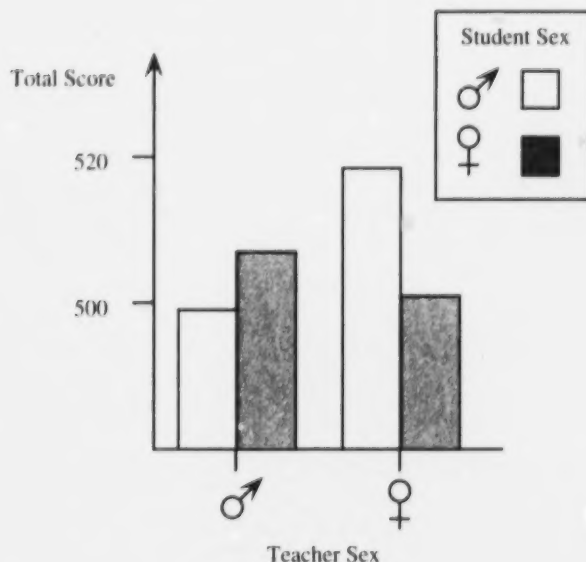


Figure 4.5. The average effect of gender match between teacher and student in IRELAND, SINGAPORE and SPAIN in Population A

SPAIN). Figure 4.6 presents the average results for these countries. Four of the five countries with significant gender match had established their educational systems within the British tradition, and they all have an early school start.

How can the gender match effect be explained? A popular hypothesis is generated from dynamic psychology referring to the process of identification. Young boys, then, need a male identification object from which values and ideals are incorporated. Boys who meet male adults who seem to enjoy and value reading will be more ready to embark on the difficult journey into literacy. In a corresponding way, girls will profit more from female teachers. However, it should be noted that this hypothesis was not supported in a majority of countries.

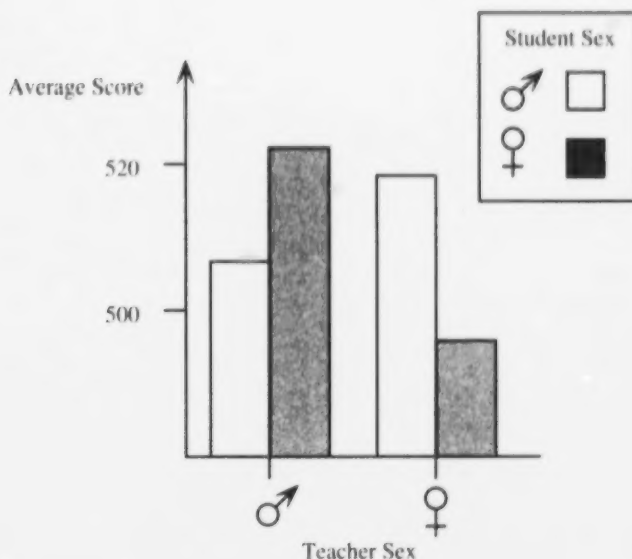


Figure 4.6. The average effect of gender match between teacher and student in CANADA (BC), NEW ZEALAND, TRINIDAD AND TOBAGO, IRELAND and SPAIN IN POPULATION B

Other gender differences among teachers

In Population A gender differences among teachers were surprisingly consistent on a number of variables and sometimes rather substantial across many countries, despite the variation in socio-cultural and economic conditions. The most consistent gender difference was found in teacher reading habits. In 12 out of 24 countries in Population A (in three countries the number of male teachers was too small), male teachers reported considerably higher frequency of reading books in history, politics and science than did female teachers. A tendency in the

same direction, although somewhat weaker, was found in another eight countries. In contrast, female teachers reported a higher frequency of reading novels in most countries. The same pattern of gender differences in readership was observed in Population B, although the number of countries with large differences was lower.

Several gender differences were observed also in the teacher responses to questions on instructional practices. The female teachers gave more responses indicating higher levels of activity and more commitment than did male teachers. In Population A female teachers had their students looking for themes in texts more often than male teachers, they tended to read stories to children more often, they encouraged their students to read more, they emphasized more the importance of developing a lasting interest in reading among the students, they more often reported that they show their students how to understand a text and they also reported that they use self-prepared materials to a larger extent than male teachers do.

Teacher Readership

The amount of reading reported by the teachers can be expected to be related to the way they teach and to their attitudes towards reading and reading instruction. A reasonable assumption is also that the teachers' reading patterns will affect their students' reading. For example, a teacher with strong interests in literature will probably try to develop similar interests among the students. Another reasonable assumption is that a high level of readership reflects high intellectual aspirations among the teachers. Those who expand their knowledge by extensive reading would be expected to increase their competence as teachers.

The teachers' reading habits were assessed by questions on how often they read various kinds of materials. Three main areas were covered: professional reading (articles on teaching, articles on reading), expository reading (books on history or politics, books on the arts, books on science) and literature reading (novels or short stories, poems, plays, children's literature (Population A), articles on literature (Population B)).

The average reported frequency of reading varies considerably across countries as shown in Figures 4.7 and 4.8. Countries like INDONESIA, TRINIDAD AND TOBAGO, PORTUGAL, VENEZUELA and GREECE in Population A report a high frequency of professional material, whereas teachers in SWITZERLAND, SWEDEN, the NETHERLANDS, BELGIUM (FRENCH), GERMANY (EAST) and FRANCE seem to be exposed to professional literature less often. Obviously, there is no relationship with student achievement or with teacher education. The pattern is very similar in expository reading and literature reading. In Population B, the leading countries in professional reading are BOTSWANA, the PHILIPPINES, ZIMBABWE and NIGERIA. These countries also take the lead in the other domains of readership. A possible explanation of this result might be the strong *compliance effect* involved in questions asked about highly valued habits. The social desirability

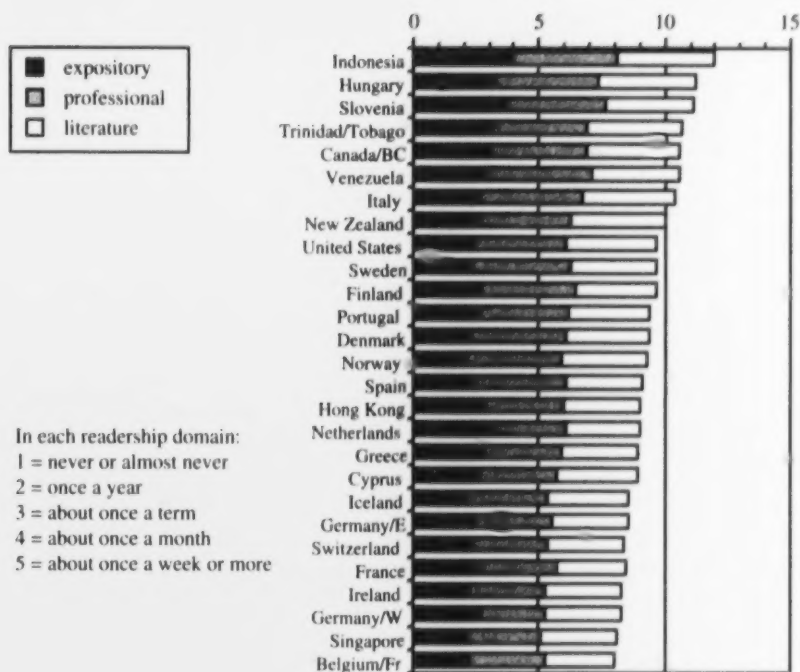


Figure 4.7. Between-country variation of teacher readership in Population A

factor apparently operates differently in different countries. A closer look at the country level might be more revealing.

A fairer comparison might be made by looking at a subset of ten West European countries with similar levels of economic development. The rank order in professional reading in Population A then becomes: FINLAND, DENMARK, NORWAY, ICELAND, FRANCE, BELGIUM (FRENCH), the NETHERLANDS, SWEDEN, GERMANY (WEST) and SWITZERLAND. In Population B the corresponding rank order is: DENMARK, NORWAY, SWEDEN, FINLAND, FRANCE, ICELAND, BELGIUM (FRENCH), SWITZERLAND, the NETHERLANDS and GERMANY (WEST). The high position of DENMARK in both populations is interesting. Professional activities among Danish reading specialists and reading teachers are well known as they are active in publishing books and professional journals with wide circulation. Within the International Reading Association, DENMARK has one of the largest councils in relation to the size of the population. The low rank of GERMANY (WEST) is surprising considering the unusually long education of West German teachers.

In expository reading, the rank order among the ten West European countries in Population A is: FINLAND, DENMARK, NORWAY, BELGIUM (FRENCH), FRANCE,

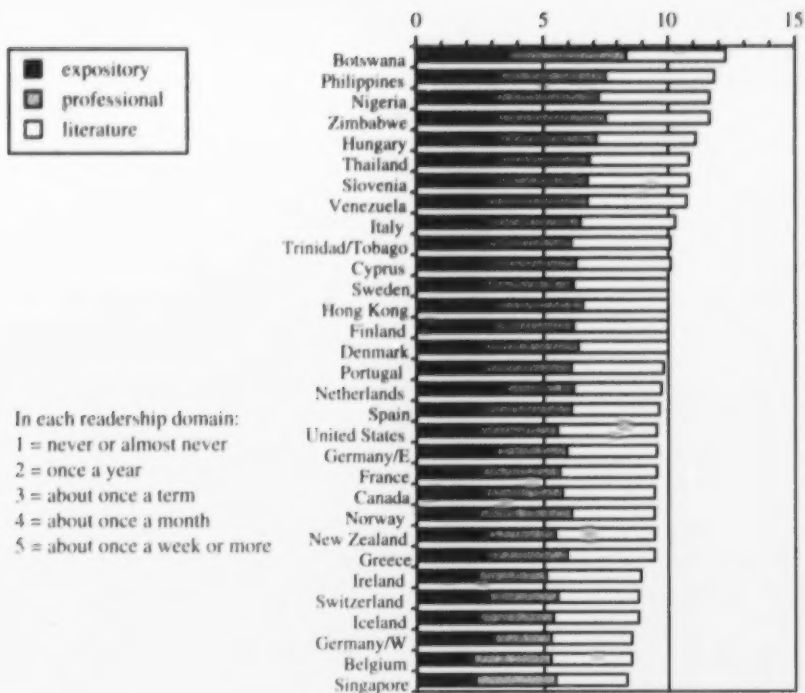


Figure 4.8. Between-country variation of teacher readership in Population B

GERMANY (WEST), the NETHERLANDS, ICELAND, SWITZERLAND, and SWEDEN. In Population B, the order is: the NETHERLANDS, GERMANY (WEST), FINLAND, SWITZERLAND, DENMARK, SWEDEN, ICELAND, FRANCE, NORWAY and BELGIUM (FRENCH). Here it can be noted that FINLAND keeps its high position, which may be a factor to take into account when explaining FINLAND's high level of achievement.

Finally, the rank order of teacher readership in literature in Population A for the ten countries is: FINLAND, DENMARK, NORWAY, BELGIUM (FRENCH), ICELAND, FRANCE, GERMANY (WEST), the NETHERLANDS, SWITZERLAND, and SWEDEN. In Population B the order is: SWEDEN, FINLAND, FRANCE, DENMARK, the NETHERLANDS, ICELAND, NORWAY, SWITZERLAND, GERMANY (WEST), and BELGIUM (FRENCH). Here, FINLAND's advanced position is confirmed. The Population B teachers of SWEDEN are now at the top, which might reflect the more academically-oriented specialization in literature of Swedish teachers at the Population B level. The first three countries actually have almost the same score. These are also the countries with the highest average achievement scores of all countries.

Are the reading habits of teachers related to their instructional practices and attitudes?

In a number of countries, significant correlations were found between the teachers' personal readership and some of the instructional strategies reported. Table 4.1 presents the statements on instructional practices where significant correlations were found in a large number of countries in Population A. The figures in the table refer to the number of countries with significant correlations ($> .20$; the correlations seldom exceeded $.35$). For example, *learning library skills* was significantly correlated with teachers' professional reading in seven countries, with expository reading in 11 countries and with literature reading in 13 countries.

Table 4.1. The number of countries with significant correlations between teacher readership and instructional practices: Population A.

Instructional practice	Teacher readership		
	Professional	Expository	Literature
Discussion of books	16	16	17
Reading plays or dramas	9	12	17
Learning library skills	7	11	13
Playing reading games	8	13	12
Dramatizing stories	11	13	16
Reading students' writing	12	13	12
Making predictions	14	8	9
Diagramming content	11	12	8
Compare stories	8	15	15
Use self-prepared materials	16	14	11
Know students' reading interests	11	13	13
Interviews for assessment	15	16	14
Literary appreciation	9	13	12
Students' interests	19	16	18
Generalization and inference	12	11	8
Frequency teaching exposition	10	16	12
Frequency teaching documents	12	14	11

With few exceptions, the correlations were similar across reading domains. In a majority of countries, teachers who reported frequent reading in any domain tended to have discussions of books with their students. They also tended to have their students study the style and structure of texts and have them compare pictures and text in stories. Teachers with a high level of readership tended to more often use self-prepared teaching materials. In assessment they focused more on the amount of reading and on students' interests. Most of these teaching behaviors seem to reflect a view of reading where the constructive and active nature of the reading process is recognized. A student-oriented style of teaching is also indicated.

Not surprisingly, there are some significant correlations which are more concentrated on a specific domain of readership. Thus, for example, having the students read plays and dramas is more often correlated with the teacher reading literature than with any other domain of readership. This also holds for having students learning library skills, assessing their literary appreciation, and having them dramatize stories. Clearly, these practices reflect the teachers' literature orientation both in their own reading and in their teaching practice.

The amount of professional reading, on the other hand, has a more frequent relationship with having the students make predictions, having them diagram content, and having them make generalizations and inferences from text. To some extent such practices may reflect a more instrumental and achievement-oriented attitude toward reading instruction. The teaching methods are also in line with current research on the teaching of text comprehension.

The teachers who reported frequent reading of expository materials also tended to spend more time on teaching how to read expository texts.

To summarize, the relationship between the teachers' own reading and their instructional practices is similar across many countries in Population A. This tendency provides some support for an internal validation of the questionnaire.

In Population B, many consistent correlations between readership and instructional practices were also observed. The main results of this correlation analysis are summarized in Table 4.2, which is of the same kind as Table 4.1 above. Thus, the numbers in the table refer to the number of countries where significant correlations were found. First, it should be noted that the frequency

Table 4.2. The number of countries with significant correlations between teacher readership and instructional practices: Population B.

Instructional practice	Teacher readership		
	Professional	Expository	Literature
Discussion of books	14	10	16
Reading plays or dramas	4	5	10
Relate to own experience	11	10	15
Study style and structure	11	8	16
Use illustrations	7	15	5
Talk to somebody else	11	9	12
Frequency teaching narrative	12	6	9
Frequency teaching expository	20	20	11
Frequency teaching documents	13	17	5

with which various types of reading are taught correlated significantly with teacher readership in many countries. The frequency of teaching expository reading correlated significantly with the teachers' professional and expository reading in 20 countries. There is also an expected imbalance among the

readership domains. Thus, the frequency of teaching document reading was not correlated with literature readership as often as with expository and professional readership.

Teacher readership also correlated significantly with a number of activities in which students may be involved. Teachers who reported extensive personal reading of literature seemed to have students who were often involved in a discussion of books and who often read plays or drama or studied style and structure of texts. Teachers who reported extensive reading of expository texts seemed to have their students more often learn how to use illustrations (graphs, diagrams, tables) to understand texts. Teachers with a high level of readership also reported that they taught students to increase their comprehension by talking to somebody else about what they read or to compare what they have read with experiences they have had. The students also tend to talk to somebody else about what they have read or write something of their own on what they have read. Thus again, as in Population A, teachers who read frequently tend to have a more modern view on reading where the active, constructive and social character of reading is emphasized.

Is there any relationship between teacher readership and student achievement?

Contrary to expectations no clear relationships were found between the teachers' reading habits and the student reading achievement. Within the pooled international data set including all teachers in Population A, the only significant relationship with achievement was observed in exposition readership where the correlation with the total achievement score was negative (-.12). At the within-country level in Population A, significant correlations were only found in a few countries, again for exposition readership. In HUNGARY and ITALY the correlations were .20 and .24 respectively. In GERMANY (EAST) the correlation was surprisingly negative (-.21). In Population B significant correlations were also rare.

Teacher readership and student voluntary reading

One would expect that teachers who have a well developed private readership would inspire the students' reading interest to a greater extent than teachers with less developed reading habits. It is both a question of acting as a model and more deliberately encouraging students to read. However, with rather few exceptions most of the correlations between teacher readership and student voluntary reading in Population A were small and statistically insignificant. In a few countries, a positive correlation was observed between students' reading of magazines and the teacher readership (in FINLAND with teachers' professional reading (.25) and literature reading (.25), in FRANCE with teachers' literature reading (.21), in INDONESIA with expository reading (.24), in NEW ZEALAND with literature reading (.20) and in SLOVENIA with professional reading (.22)).

Correlations between teachers' professional reading and students' newspaper reading were found in HUNGARY (.23) and NEW ZEALAND (.22). In Indonesia, students' newspaper reading was correlated with teachers' expository reading (.26).

The generally weak relationship between teacher and student voluntary reading suggests that factors outside school are more powerful determinants of students' readership, especially the cultural capital of the homes. Among 9-year-olds, the extent to which the reading skill has become fully automated and effortless is certainly also important.

Teachers' Views on Reading Instruction and Teaching Aims

Teacher characteristics also involve the teachers' general conception of the aims of teaching reading and their belief systems or views on reading instruction. The Teacher Questionnaire for Population A included a set of 26 statements related to reading instruction, such as *Children should always understand what they read* or *Every mistake a student makes when reading aloud should immediately be corrected*. For each of the statements the teachers had to express the extent to which they agreed or disagreed with the statement on a 5-point bipolar scale, where 1 indicated strong disagreement and 5 strong agreement. Some of the statements expressed a view of reading instruction where accuracy and careful sequencing were emphasized. Other statements expressed a more student-oriented and comprehension-oriented view of reading instruction. Another task in the questionnaire involved the ranking of importance of aims for reading instruction. The aim ratings will be reported first.

Teachers' ratings of aims (Population A)

Twelve different aims were presented to Population A teachers who had to select the five most important aims and rank them in importance. Examples of such aims were: *Developing a lasting interest in reading*, *Developing students' critical thinking*, *Increasing speed of reading*. By having teachers make a selection of aims and rank them it was, to some extent, possible to avoid compliance effects, which would have occurred if the teacher had to consider each aim separately and give a rating of its importance.

There was a surprising conformity of the ratings across countries. The highest average rank was given to the aim of *improving students' reading-comprehension skills*. It had the first rank in 12 countries and the second in six countries. Almost equally high ranking was given to the aim of *developing a lasting reading interest* which was given the highest rank in 15 countries. High average rankings were also given to the aim of *making reading enjoyable*. Ten countries selected this aim as the second most important. The least important aims were to *deepen the emotional involvement*, *developing skills in reading aloud*, and *develop word attack skills*.

The rated aims were subdivided into two main groups, one indicating emphasis on skills and the other indicating emphasis on encouragement and development of reading interests. The first group contained the following five aims:

developing skill in reading aloud
improving students' reading comprehension
extending students' vocabulary
improving word-attack skills
increasing speed of reading

The encouragement-interest group contained:

developing a lasting interest in reading
developing students' research and study skills
developing students' critical thinking
expanding students' world views
making reading enjoyable

The encouragement-interest factor was, on the average, given a higher rank than the skill factor regardless of achievement level of the country. However, the high-achieving countries tended to have a wider gap between the two sets of aim ratings than the low-achieving countries.

In some countries there was a large difference between the average ratings of the two types of aims. In FINLAND, SWEDEN, NORWAY, DENMARK, GERMANY (WEST), GERMANY (EAST), SWITZERLAND, NEW ZEALAND and CANADA (BC) the teachers gave a much higher priority to aims related to encouragement and development of reading interests than to the skill-oriented aims. In VENEZUELA, INDONESIA, HUNGARY, the NETHERLANDS and IRELAND skill aims were considered more important than the interest aims.

The relative emphasis on skill aims in the low-achieving countries might reflect an experienced necessity to pay attention to develop the basic elements of reading, whereas this stage of acquisition is already passed by a majority of children in the high-achieving countries. An alternative interpretation would be that skill emphasis inhibits students from a "natural" acquisition process.

Teachers' ratings of aims (Population B)

In Population B there was an even higher consistency across countries in the ranking of aims. The highest average rank was assigned to the aim of *developing a lasting interest in reading*. It had the highest ranking in 15 countries and second highest in eight countries. Intermediate ranks were given by most developing countries. The second highest average rank across countries was given to the aim of *improving students' reading comprehension strategies*. This aim had the highest rank in nine countries and the second highest in nine countries. Only SWEDEN, FINLAND, HUNGARY, GERMANY (EAST), and SLOVENIA

gave it a comparatively low rank. Thus, the two most important aims in Population B were the same as the two top aims in Population A.

A third aim with high average rank was the aim of *developing students' critical thinking*. CANADA (BC), GREECE and HONG KONG gave it the highest rank, whereas BOTSWANA, NIGERIA, SWEDEN and ZIMBABWE did not give that particular aim any high priority. All countries agreed that the aim of *teaching students how to interpret diagrams and graphs* should have a low rank. Countries where this aim was not completely neglected were the developing countries. The next lowest priority was given to the aim of *increasing the speed of reading*, although the developing countries gave it a more intermediate position in the rank order (BOTSWANA, NIGERIA, the PHILIPPINES, THAILAND and ZIMBABWE).

The aims presented to the Population B teachers could quite naturally be classified into the following four categories:

Teacher-centered skill orientation
improving students' reading comprehension
extending students' vocabulary
increasing speed of reading

Literature and interest emphasis
developing a lasting interest in reading
increasing students' appreciation of literature

Student-centered strategy orientation
developing students' critical thinking
expanding students' world views

Functional emphasis
developing students' research and study skills
expanding students' variety of reading choice
teaching students to apply study strategies to other subjects
teaching students to interpret diagrams and graphs

Comparing the means of different aim categories, the student-centered strategy orientation was generally more highly valued than the teacher-centered skill approach. Countries expressing the strongest strategic preference were DENMARK, FINLAND and SWITZERLAND. The strongest skill orientation was found in the PHILIPPINES and NIGERIA.

In order to handle the *compliance effect*, the difference between the skill and the strategy emphasis was calculated in each country. Consequently, the highest strategic emphasis on aims was found in FINLAND, GERMANY (WEST), DENMARK, GERMANY (EAST) and CANADA (BC). The strongest skill orientation was discovered in BOTSWANA, NIGERIA, the PHILIPPINES and ZIMBABWE. As a general trend, the high-achieving countries expressed a stronger strategic orientation than the low-achieving ones, where the skill approach was more valued. Among the high-achieving countries, only SINGAPORE considered the skill approach more valuable.

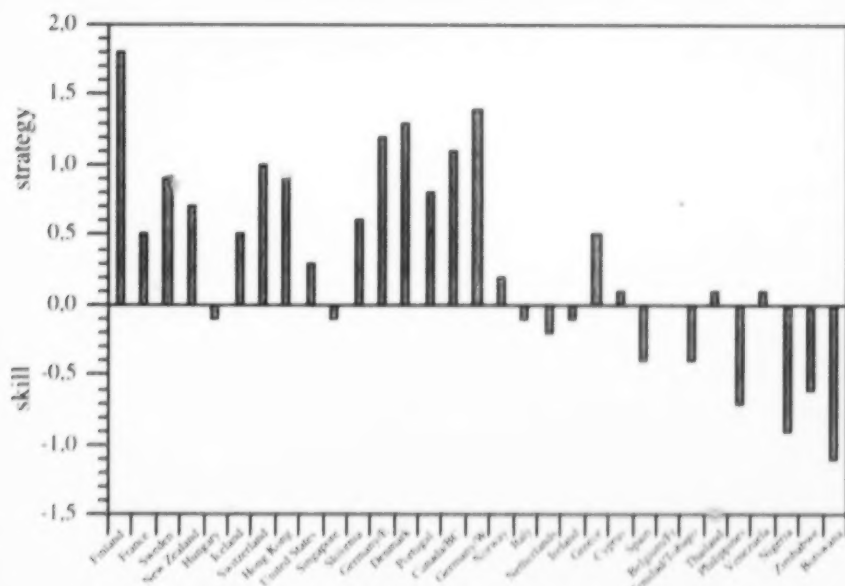


Figure 4.9. Between-country variation in differences between strategy emphasis and skill emphasis in ratings of teaching aims in Population B

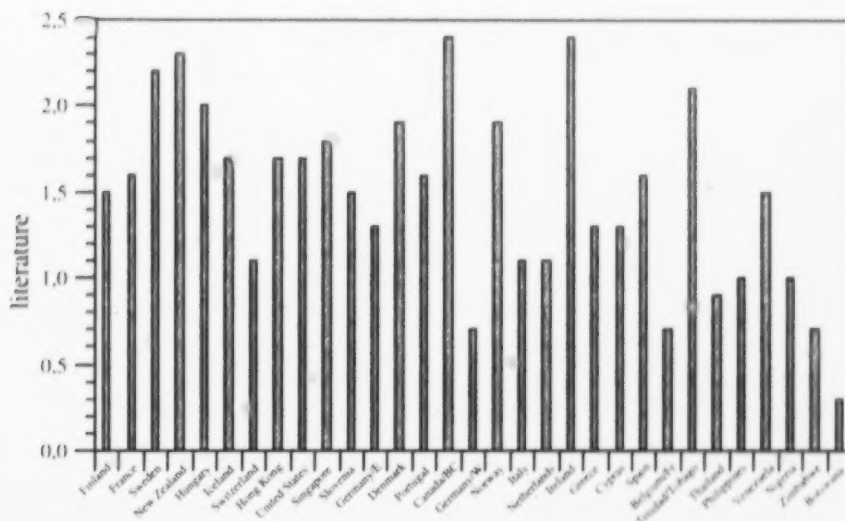


Figure 4.10. Between-country variation in differences between literature orientation and functional orientation in ratings of teaching aims in Population B

The literature orientation was highly valued by teachers in every country perhaps because a large proportion trained as literature teachers. The strongest emphasis was found in SWEDEN, HUNGARY, CANADA (BC) and NEW ZEALAND, whereas the strongest weights were given on functional values in GERMANY (EAST) and GERMANY (WEST) as well as in HUNGARY and BOTSWANA. The difference score confirmed that the literature orientation was most highly valued in CANADA (BC), IRELAND, SWEDEN and NEW ZEALAND. The difference was smallest in BOTSWANA, BELGIUM (FRENCH), and GERMANY (WEST). There is a weak tendency for the high-achieving countries to value the literature orientation more than low-achieving countries, although the strongest literature emphasis was found among countries with average achievement.

When the two dimensions of aims were related orthogonally, the countries were located in this space as shown in Figure 4.11. The quadrant where strategy orientation is combined with functional orientation is completely empty, which is also the case for the combination of functional orientation and skill orientation. With the exception of HUNGARY and SINGAPORE, the quadrant where skill-orientation and literature-orientation are combined is occupied by low-achieving countries. The position of the country with the highest average achievement, FINLAND, is notable. The average Finnish teacher has a high esteem for strategy-orientated aims and a relatively high esteem for literature aims.

Further explorations of the significance of the aims dimensions should be carried out at the within-country level. Here, only a few specific observations

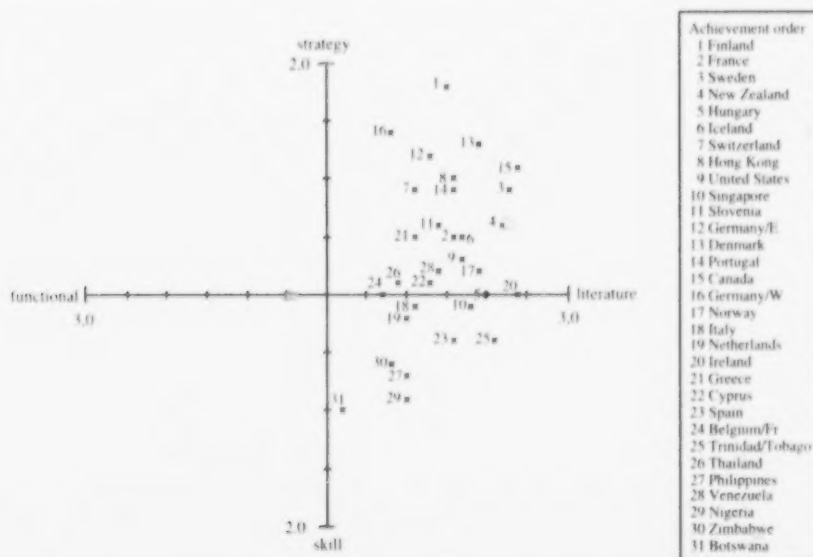


Figure 4.11. Two dimensions of aims of reading instruction

will be noted. A rather strong negative correlation between the aim of increasing reading speed and achievement was observed in IRELAND (-.40). The aim of developing students' appreciation of literature had a significant positive correlation with achievement in IRELAND, FRANCE, the NETHERLANDS, NEW ZEALAND, PORTUGAL, SPAIN, and SWITZERLAND. Most other correlations between aim ratings and achievement were nonsignificant within countries.

Some concluding comments on aims ratings

The invariance across countries in the ranking of teaching aims is certainly a remarkable finding. Obviously, the reading task must have inherent demand characteristics which invoke almost universal agreement on what is important to teach. Most national teaching cultures seem to value highly the aims of developing students' own strategic thinking and their lasting interest and enjoyment of reading and literature. Functional, everyday literacy is not generally valued as a focus for teaching. It may be that instrumental literacy is assumed by the teachers to be developed in other subject areas or through environmental reading outside school.

The valued aims are, as a rule, more modern and progressive than instructional reality where several restrictions are imposed, such as management and discipline problems, big classes with students varying widely in ability and interests, limitations on materials, classroom environment, and time constraints. In the next chapter the relationship between aims and actions will be further explored.

Is there any relationship between teachers' views on reading instruction and how they teach?

As described above, the aims of reading instruction presented to the Population A teachers could be divided into two subgroups, one where the skill aspect of reading was emphasized, and one subgroup where thinking, enjoyment and reading interests were more in focus.

Do these different orientations of attitudes towards reading instruction correlate differently with various indicators of teaching behavior? The answer is: Only to a limited degree and only in a few countries were significant correlations found. One question concerned to what degree the teachers have their students involved in *discussions of books*. In DENMARK, GREECE, the NETHERLANDS, and PORTUGAL there was an expected positive correlation with the sum of the enjoyment-interest items and a negative correlation with the sum of the skill items. In a sense this finding is a partial validation of the questionnaire items involved, or at least it demonstrates an internal consistency in the response pattern in these countries.

Likewise, there was a positive correlation in four countries between the enjoyment-interest factor and *encouragement of parental involvement* in their children's reading. The skill factor was negatively related to parental encour-

agement. In six countries there were significant correlations with some view expressed. *When my pupils read to me I expect them to read every word accurately* correlates positively with the skill aims and negatively with the enjoyment-interest aims. The same expected pattern was observed for *Every mistake a child makes in reading aloud should be corrected at once*. The reverse pattern was obtained in five countries with *All children should enjoy reading*. The frequency with which the teacher assesses the amount of reading done by the students also correlates significantly with the aim factors in many countries. However, the sign pattern of the correlations is very inconsistent.

A similar analysis was also performed at the Population B level. Here the interest-oriented aims correlated positively with having students *relating experiences with reading* in GERMANY (WEST) and the UNITED STATES, with *studying the style and structure of a text* in GERMANY (WEST) and SWITZERLAND, with *discussion of books* in the NETHERLANDS, and with *teachers reading literature* in FINLAND, BELGIUM (FRENCH), CANADA (BC), SWEDEN and SWITZERLAND. Negative correlations between interest-oriented aims and other variables were also found, with *learning to use graphs, diagrams, tables to understand text* in ICELAND, BELGIUM (FRENCH) and CANADA (BC), with *teaching document reading* in ICELAND (-.41!), BELGIUM (FRENCH), CYPRUS, SWITZERLAND and the UNITED STATES, with *expository teaching* in SWITZERLAND and the UNITED STATES. Thus, emphasizing interest-oriented aims is not compatible with a more technically, factually-oriented teaching. It seems to correspond more with a literature orientation.

This picture is reinforced when the correlations between skill-oriented aims and other variables are analyzed. Here negative correlations are found with *relating experiences to reading* and *studying the style and the structure of texts* in FRANCE and GERMANY (WEST), *discussion of books* in the NETHERLANDS and *reading plays or dramas* in THAILAND. There is also a negative correlation to *teachers' literature reading* in FINLAND, GERMANY (WEST), BELGIUM (FRENCH), the NETHERLANDS, SWEDEN and SWITZERLAND. A negative correlation with teaching narratives is found in GERMANY (WEST), whereas positive correlations with teaching documents are found in GERMANY (WEST), ICELAND, CYPRUS and SWITZERLAND.

Although these positive findings have been identified, there was little convincing evidence of a strong and consistent relationship across countries between the aims preferred by the teachers and the way they report that they teach. Closer analyses at the within-country level might reveal clearer results. However, the basic limitation of questionnaire data should be recognized. Fishbein and Ajzen (1975) have also demonstrated the lack of correspondence between attitudes or beliefs on the one hand and actual behavior on the other. Conflicts between ideals and reality are certainly common in the teaching profession.

Is there any relationship between teachers' views on reading instruction and their students' achievement on the reading tests?

When single questions in the questionnaire are correlated with specific outcome variables, like the students' performance on the expository texts, one should normally not expect many significant correlations. One reason for that is the lack of reliability (measurement error) when a single item is used. Poor reliability of the measures prevents a true relationship from showing up. It is attenuated by the measurement error. Under certain conditions, however, it might be possible to reveal an underlying relationship. Here we will give one simple example. In further reports of multivariate analyses of the data from this study, more complicated cases will be presented.

Teachers are supposed to vary in terms of the degree to which they emphasize accuracy, order and careful sequencing in their reading instruction of young children. Out of the 26 statements given to the Population A teachers, the following statements were particularly formulated with the intent to capture this attitude to reading instruction:

"When my pupils read to me, I expect them to read every word accurately"

"Every mistake a child makes in reading aloud should be corrected at once"

"All children's comprehension assignments should be marked carefully to provide them with feedback"

"Children should learn most of their new words from lessons designed to enhance their vocabulary"

"Reading materials should be carefully sequenced in terms of language structure and vocabulary"

It is assumed that these five items are all indicators of an underlying trait or disposition (sometimes called a factor). Of course, each item captures something which is specific to that very item but also something which is more general and which the item has in common with some other items. This factor is statistically identified with a method which takes into account how the teacher responses covary across the six items and from that information extracts what these different items or statements have in common.

In a similar way the outcome or achievement factor can be constructed by an analysis of what narrative, expository and document reading have in common. If this underlying general reading ability is now correlated with the underlying accuracy-order factor, in a sense the measurement errors which attenuated the correlation between single items and single measures of achievement have been eliminated. A "truer" relationship can then be revealed. Figure 4.12 might clarify the situation. The circles represent the underlying factors which are related. To each factor there are a number of manifest indicators (the responses to the questionnaire items and the performance on each subtest) marked as

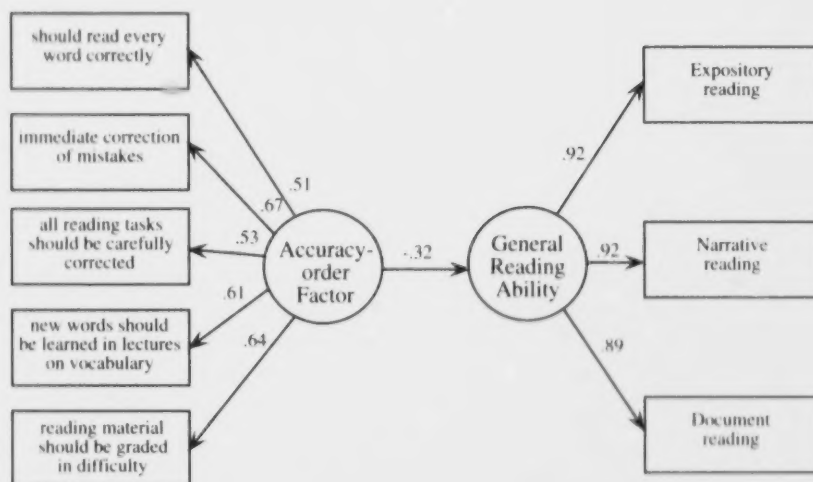


Figure 4.12. The relationship between two latent factors: A teaching view emphasizing accuracy and order and student reading achievement

rectangles with arrows pointing to them from the underlying factor. Each arrow has a number showing how well it serves as an indicator of the factor.

The relationship between the factors is expressed by the number $-.32$, which tells us that if we increase the factor of accuracy-order-sequencing emphasis with one standard deviation unit the average reading ability of the students will decrease with one third of a standard deviation unit. In other words, the more emphasis the teacher has on accuracy, order and sequencing the poorer is the average reading achievement of the students.

Even though the method used in this analysis sometimes is called causal modeling (LISREL), one cannot immediately make a causal inference from the finding. Only correlational data is used in this cross-sectional survey, and causal interpretations are not justified. It might seem reasonable to assume that a too strict regimen in teaching can be harmful to students and reduce the possibility of skill development according to their potential. On the other hand, a logical, and perhaps in some cases, plausible alternative could be that teachers who are confronted with poorly achieving students might be forced to change their teaching strategies and put more emphasis on accuracy and order. Only longitudinal studies with careful direct classroom observations may clarify the causal issue.

In any case, the model given as an example here had a very good fit, that is, the original relationships between the manifest variables could be reproduced with high accuracy from the model ($AGFI = .98$). The model was based on the pooled international data set. The next step is to investigate how this model

works on the national level. In forthcoming reports there will be many more examples of this kind of modeling, which obviously have the power of revealing relationships which normally are obscured by unreliable manifest variables.

Summary

The main findings on teacher characteristics presented in Chapter Four can be summarized as follows:

- The variation between countries, in terms of how many years of experience the average teacher has, does not seem to be related to variation in national achievement level. Within many countries, however, there is a positive relationship between length of experience and average reading performance in the class taught by the teacher.
- Young teachers more often report "modern" practices of instruction and hold more student-oriented views than more experienced teachers, who, in turn, tend to be more traditional and skill-oriented.
- In many countries, female teachers produce better results than male teachers. A gender match between students and teachers was better than a mismatch in some countries.
- Small gender differences between teachers were observed in teacher readership and in attitudes and practices related to reading instruction.
- Questions on reading habits and teaching behavior are presumably affected by social desirability.
- No clear relationships between teacher readership and student achievement were observed. With few exceptions, the correlations within countries between teacher readership and student voluntary reading were also weak.
- A comparison made between a subset of economically advanced West European countries revealed that teachers in the highest-achieving countries, FINLAND, FRANCE and SWEDEN had a higher average level of readership than teachers in the other countries.
- In a number of countries, significant correlations were found between the teachers' personal readership and their instructional strategies. Teachers who reported extensive reading tended to have discussions of books with their students and had them study the style and structure of texts more often than did teachers with a low level of readership.
- There was a high conformity across countries in the way teachers perceived various aims of reading instruction. *Developing a lasting interest in reading* and *improving students' reading comprehension* were given the highest ranks in both populations.

- Skill-oriented aims tended to be relatively more highly valued in low-achieving countries, whereas affective or literature-oriented aims were given higher priority in the high-achieving countries.
- A view of reading instruction where accuracy, order, sequencing and systematicity is emphasized has a significant negative correlation with student achievement.

CHAPTER FIVE

TEACHING STRATEGIES

The Teacher Questionnaire for Population A contained a large number of questions referring to instructional practices. Some of them have already been brought up in the discussion of gender differences in teaching, the effects of varying teaching experience and how teachers' attitudes were related to their teaching practices. This chapter will give a descriptive overview of how these practices vary across countries. Chapter Six will then deal with the relationship between instructional practices and student achievement.

Time allocation on various reading domains

A first obvious question to ask is how frequently teachers dealt with each of the three domains of reading: narration, exposition and documents. The frequency with which they taught students to understand these types of materials was rated on a 5-point scale (*almost never, three or four times a year, about once a month, at least once a week, nearly every day*).

In Population A, narration was taught on the average with the highest frequency (3.5). Exposition teaching had a mean rating of 3.15 and teaching about documents had 2.6. Figure 5.1 displays the distribution of ratings across

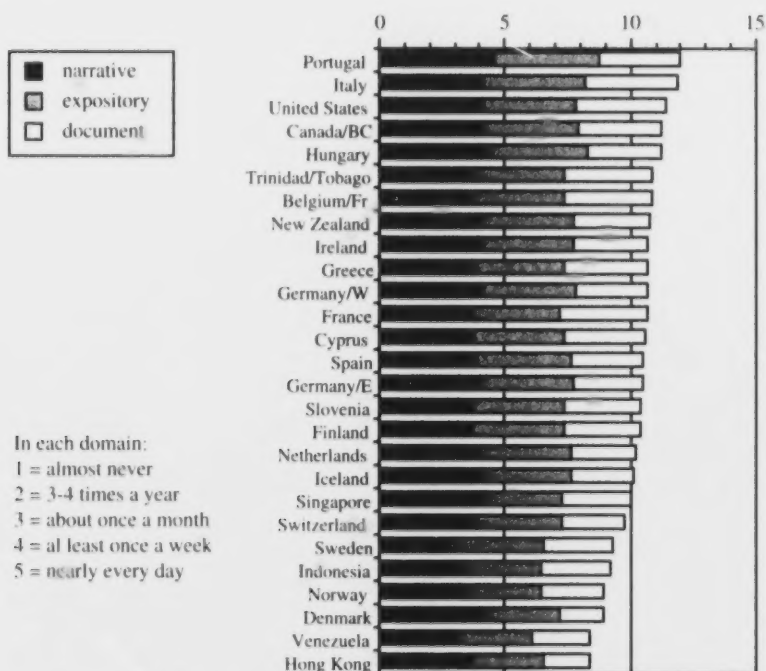


Figure 5.1. Between-country variation in average time allocated to teaching of various reading domains in Population A

countries for the three domains. Narration was taught with particularly high frequency in PORTUGAL, DENMARK and HUNGARY. Low narrative ratings were delivered by teachers in SWEDEN, NORWAY, VENEZUELA and INDONESIA. For exposition, high ratings were found in ITALY, PORTUGAL and HUNGARY, and low ratings in DENMARK and HONG KONG. A high frequency of document teaching was reported in ITALY and the UNITED STATES, whereas DENMARK and HONG KONG gave low ratings.

In Population B the pattern was rather similar. Narration was taught with an average frequency rating of 3.6 across all 31 countries, exposition with an average of 3.3, and documents with average of only 2.3. If we restrict the comparisons to the ten Western countries with relatively similar economic development, the similarities in time allocation are high, as seen in Figure 5.2. Narration is taught with the highest frequency in DENMARK, whereas FINLAND, SWEDEN and the NETHERLANDS have the lowest frequency. In exposition, GERMANY (WEST) takes the lead, but the variation between countries is here very small indeed for this genre of reading. More attention to documents was paid by teachers in GERMANY (WEST) and SWITZERLAND as compared with the other countries in the subgroup.

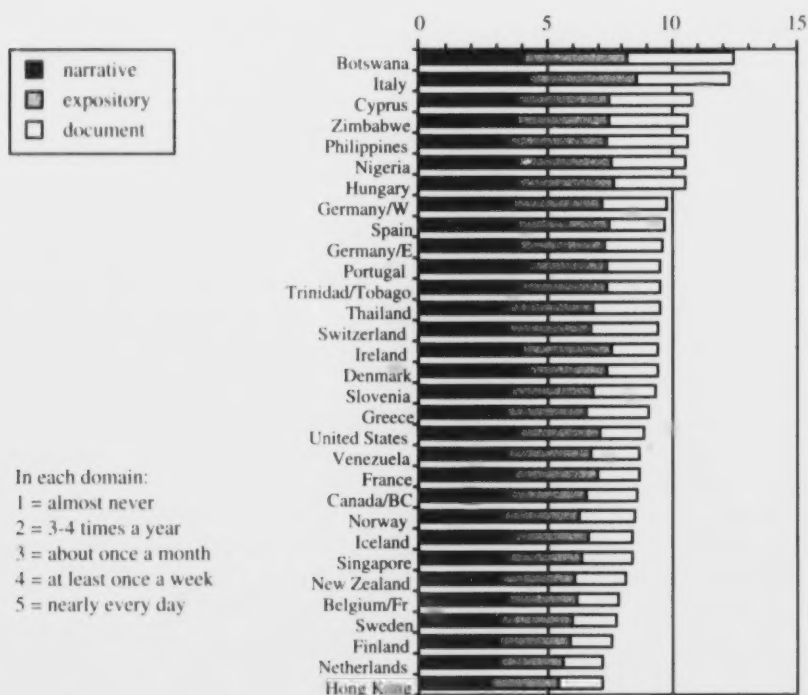


Figure 5.2. Between-country variation in average time allocated to teaching of various reading domains in Population B

The ratio between document teaching and narration is an indication of the relative stress teachers put on document teaching regardless of their general frequency bias. Across all countries this ratio was .75 in Population A and .64 in Population B suggesting that document teaching has a somewhat stronger position in the lower grades. A notable exception is DENMARK where the ratio was only .39. In developing countries in Population B, the ratio was closer to 1.0, which could indicate either a response bias in the direction of giving a relatively high rating to everything regardless of the content, or a true difference in teaching pattern with far more emphasis on document teaching than in more developed countries.

Grouping students for reading instruction

According to a review of the research literature on grouping (Barr and Dreeben 1991) the practice of grouping students within classes on the basis of ability is pervasive in American schools. Despite extensive research on the effectiveness of ability grouping on student achievement, no convincing evidence for the advantage of ability-grouped reading instruction within classes has so far been presented. In this study the teachers of Population A marked the most common type of grouping that was used in reading instruction. The alternatives were: *No*

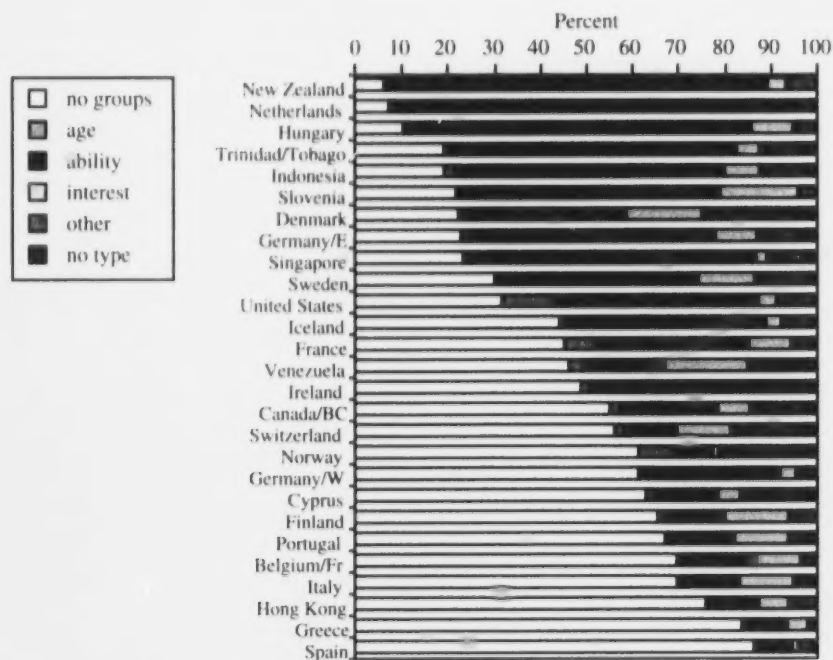


Figure 5.3. Instructional grouping in Population A

grouping at all, age grouping, ability grouping, grouping by students' interests, other types of grouping.

Some kind of grouping was used by almost all teachers in all countries. By far the most common type of grouping was ability grouping. The only exceptions were FINLAND and ITALY. In FINLAND, 40 percent of the teachers reported interest grouping as the most frequent type of grouping and only 36 percent marked ability grouping. The corresponding figures in Italy were 41 and 38 percent. Countries with a very high proportion of ability grouping were the NETHERLANDS (94 percent), IRELAND (89 percent), NEW ZEALAND (89 percent), HUNGARY (84 percent), SINGAPORE (80 percent) and ICELAND (80 percent). Countries with relatively low proportions of teachers practicing ability grouping were NORWAY (21 percent), VENEZUELA (24 percent) and SWITZERLAND (28 percent).

The practice of ability grouping can be regarded as a management technique which is presumed to facilitate teaching. However, on the between-country level there is no clear relationship of ability grouping with student achievement. On the other hand, there is a slight correlation between ability grouping and average class size (.28). In countries with relatively poor economic development, large classes are mainly a reflection of limited resources. When the eight poorest countries are excluded from the analysis, the correlation between the practice of ability grouping and average class size increases to .59, which indicates that large classes require some management measures, such as ability grouping.

Age grouping is a very rare practice except in the UNITED STATES where this kind of grouping is reported by 17 percent of the teachers as the most common grouping. More frequent is interest grouping. As already mentioned, FINLAND and ITALY take the lead here. Other countries with relatively high proportions in this category were PORTUGAL (36 percent), BELGIUM (FRENCH) (29 percent), and GREECE (28 percent).

The relatively high variance of grouping patterns within many countries makes it possible to explore the determinants and the effects of grouping more thoroughly at the within-country level.

Homework assignments

Like many other skills, reading requires thousands of hours of practice before it is fully automated and can proceed with the same facility and speed as normal listening to speech. A simple assumption, then, is that the more opportunities given to practice the skill the faster and better does the skill develop. The teachers in Population A were asked if they assigned homework to their students, and if they did, how frequently homework was given. They were also asked how many minutes they expected an average student to spend on the assigned homework each time it was given. It is assumed that this expectation reflects the amount of homework assigned to students each time.

Across countries the teacher expectations of the time spent on homework vary considerably as can be seen in Figure 5.4. In the UNITED STATES the average teacher expects the students to work for more than 50 minutes, whereas the IRISH and SWISS teachers think that ten minutes is enough. Relatively high expectations (more than 20 minutes) are found among teachers in CYPRUS, GREECE, HONG KONG, HUNGARY, ICELAND, INDONESIA, ITALY, SINGAPORE, TRINIDAD AND TOBAGO, and VENEZUELA. Obviously, there is no relationship between the average expected time for homework and the reading achievement of the countries. However, the variation within many countries is substantial with standard deviations of about ten minutes. Given the substantial variation, the impact of homework should be explored further within countries.

In Population A, the teachers were asked about the frequency with which students read at home as a part of the reading/language program. Wide variations between countries were also observed here. More than three times per week was reported in ICELAND, CYPRUS, PORTUGAL, HUNGARY, ITALY, IRELAND and NORWAY. Only once per week or less was reported in the NETHERLANDS, HONG KONG, BELGIUM (FRENCH) and SWITZERLAND.

In Population B, the frequency of homework assignments was estimated by the students. A high frequency of more than two times per week was reported

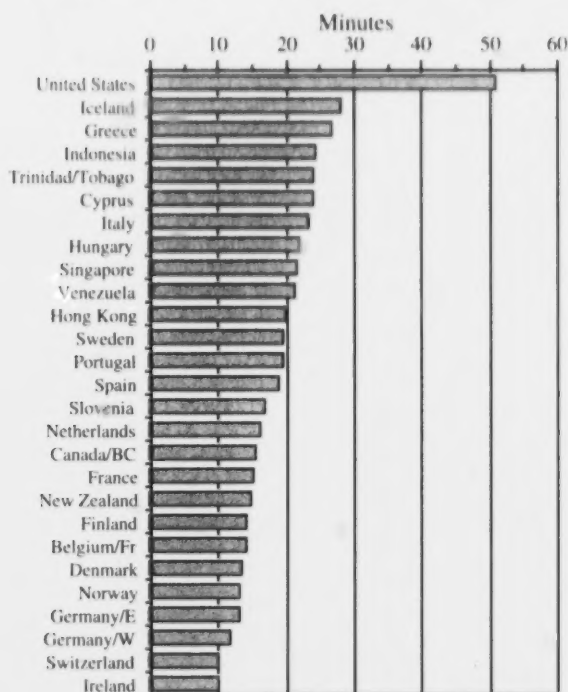


Figure 5.4. Between-country variation in average expected time spent on homework: Population A

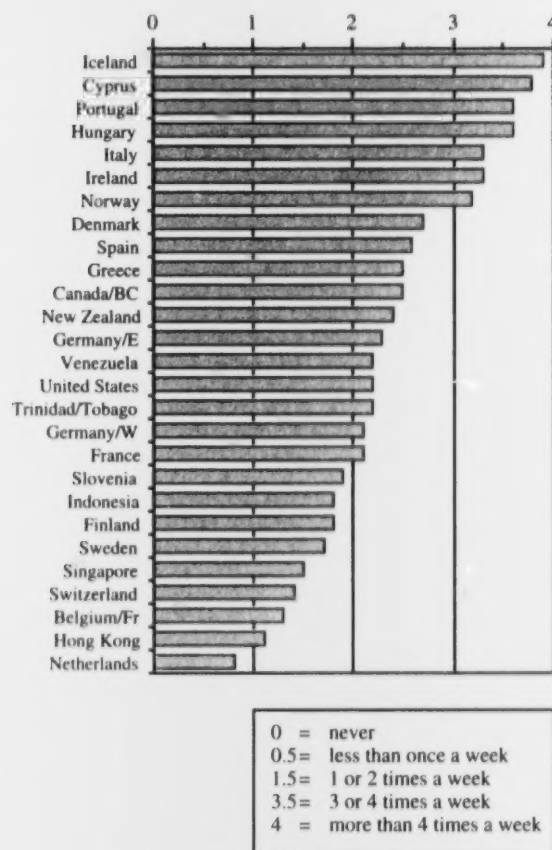


Figure 5.5. Frequency of homework assignment in Population A

in the developing countries and in the UNITED STATES, HONG KONG, ITALY and CYPRUS. Countries with a low frequency of homework were the NETHERLANDS, ICELAND, SWEDEN, NORWAY and FINLAND. Thus, high-achieving and low-achieving countries are found in both extreme groups. Neither the student data from Population B nor the teacher data from Population A support the hypothesis that the amount and the frequency of homework is a powerful determinant of reading achievement. Within-country analyses might, however, yield a different picture.

International Constructs Related to Teaching Behavior

The term construct is used here to refer to a measure of something that is not directly observable but is literally constructed by the researchers to summarize or account for the regularity or relationships that are found in the questionnaire

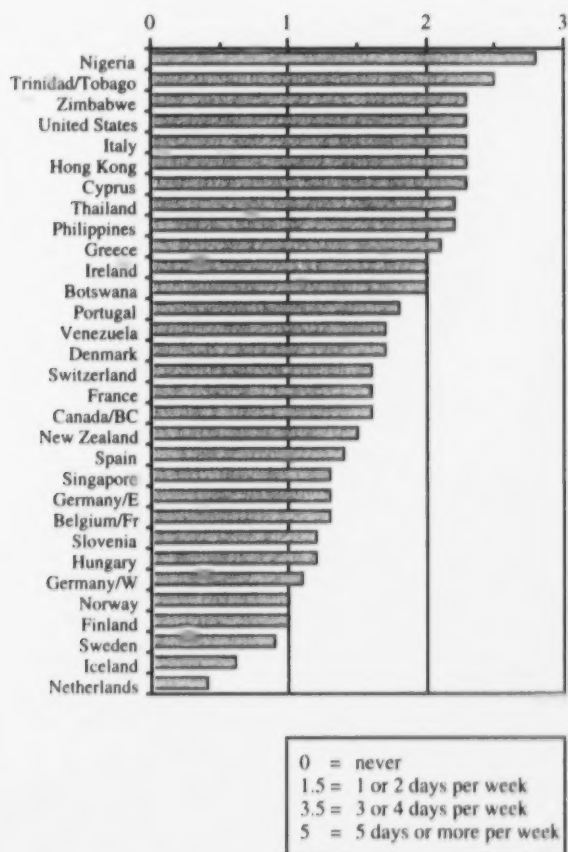


Figure 5.6. Frequency of homework assignment in Population B

responses. By establishing a limited number of constructs, the large data set (more than 100 questions on instruction in Population A) can also be reduced to a more manageable size. The accuracy-order factor discussed in Chapter Four is an example of a construct. Another example could be "Comprehension emphasis" which is a teaching strategy constructed from many questions related to comprehension. The construct analysis was restricted to Population A, where most questions on teaching were given.

The establishment of international constructs for Population A is based on a pooled data set from all the 31 countries involved. Groups of questions which seem conceptually related have been subjected to a statistical analysis called "principal component analysis". The obtained constructs or factors were checked in each country. In most cases the internationally based constructs also seemed to be applicable to the individual countries; they explain about the same amount

of variance, they are about equally reliable, and the questions have about the same factor loadings in each country.

By using internationally defined constructs, certainly some information was lost in each individual country. Several questions which might be useful in one country had to be dropped at the international level. That is the price to be paid in order to conduct an international analysis. Within a given country, a different set of constructs might actually "explain" more or take care of the variables in a better way.

The international perspective meant that the full range of variation between countries was utilized. This implies, at least in principle, that our chances increase of detecting potent determinants of differences in achievement. For example, within one country, the variation of a specific instructional method might be extremely small (most teachers in a country do about the same). Whereas across countries, the variation might be considerable. After all, this is one of the main justifications of an international study of this kind.

The internationally defined constructs facilitate the descriptions of what is going on in classrooms of the different countries. With a limited set of constructs, where each construct means the same across countries, comparative analyses are much simpler than if all 110 variables had to be considered individually. Moreover, the reliability of the comparisons are much higher than if responses to individual items are used. In other words, the measurement error is less.

The following constructs on teaching were empirically established:

(1) **Comprehension instruction** built on ten questions or items in the questionnaire concerning the students' activities during reading instruction

dramatizing stories
orally summarizing their reading
relating experiences to reading
making predictions during reading
diagramming story content
looking for the theme or message
making generalizations and inferences
studying the style or structure of a text
comparing pictures and stories
student leading discussion about passage

(2) **Emphasis on phonics** built on three items, two related to students' activities and one to assessment

learning letter-sound relationships and/or phonics
word-attack skills (e.g., prediction)
frequent assessment of phonics skills

(3) **General emphasis on assessment** built on five items, one related to students' activities, two to finding out what students need, and two to methods of assessment

answering reading comprehension exercises in writing
use exercises in workbooks and textbooks to discover students' needs
use tests in workbooks and textbooks
use multiple-choice questions
use written open-ended questions on material read

(4) **Assessment of low order skills** built on seven items related to assessment of different aspects of reading ability

students' word-recognition ability
students' vocabulary
use of background knowledge
sentence understanding
reading study skills
amount of reading
decoding

(5) **Encouragement to read** built on two items related to strategies of teaching

encourage children to read more
encourage children to use the library more

(6) **Taking students' interests into account** built on four items, one related to assessment methods, three related to methods of discovering students' needs

records of student interests
knowledge of students' reading interests
informal observation
interviews

These were the main factors on instruction and assessment which emerged from the international analysis. In this first step a number of items did not fit into any of the constructs. They were used in a second round in which some additional factors were extracted.

(7) **Student-oriented reading** built on eight items, seven related to students' activities and one to teacher stimulation of reading interests

independent, silent reading in a library
discussion of books read by students
learning library skills
reading plays or dramas
reading other students' writing

listening to students reading aloud to small groups or pairs
reading in other subject areas
hold discussions about books

(8) **Teacher-centered instruction** based on nine items, five related to teaching strategies, two to assessment methods, one to assessment aspects, and one to students' activities

introduce the background of a passage before reading it
ask children to describe their strategy for understanding
show children how to understand a text
compare stories, poems, fables and tales
use materials you have prepared yourself
use teacher-made vocabulary tests
use standardized or formal tests of comprehension
assess literary appreciation
learning new vocabulary systematically

(9) **Reading aloud to students** built on five items, one related to student activities, one to teaching strategies, two to views on teaching and one to teacher stimulation

students listening to teachers reading stories aloud
teacher reads aloud to children
every day children should be read to by the teacher from a story book
children should be encouraged to read texts they have written
teacher reads attractive stories to students to encourage them to read outside school

Differences Between Countries in Teaching Strategies and Assessment Emphasis

In this section, the variation across educational systems of each of the nine constructs defined above is described. The scale of the factor scores for each construct is such that the mean is zero and the standard deviation is one. Across all nine constructs one would then expect a grand mean close to zero in each country. However, this was not the case in several countries. Grand means greater than .10 were observed in CANADA (BC), CYPRUS, GREECE, HUNGARY, INDONESIA, ITALY, PORTUGAL, SLOVENIA, TRINIDAD AND TOBAGO, the UNITED STATES and VENEZUELA. Most of these countries are Mediterranean or non-European countries. Negative grand means ($< -.10$) were observed in BELGIUM (FRENCH), DENMARK, FRANCE, GERMANY (EAST), GERMANY (WEST), HONG KONG, ICELAND, the NETHERLANDS, SWEDEN and SWITZERLAND. Except for HONG KONG and GERMANY (EAST), these countries are all West European. All Nordic countries had negative grand means.

If a country mean clearly deviates from zero, there is an indication that the teachers of that country report an activity level which is higher or lower than the average international level. However, over and above a high activity level for a given teaching strategy, a high positive grand mean might also indicate a *compliance effect* or a response bias where high-frequency ratings are given to most items more or less without regard to the content of the question. When country means for each teaching construct are compared such tendencies should be taken into account.

(1) Comprehension instruction

Most of the activities covered by this construct are regarded by reading specialists as highly desirable practices in reading instruction. They conform well to schema theory and similar views of the reading process where the active, constructive nature of reading comprehension is emphasized. Questions involved in this construct are thus vulnerable to influences by social desirability or compliance.

As shown in Figure 5.7, countries with a high reported frequency of activities related to comprehension instruction were CYPRUS, GREECE, HUNGARY, ITALY, PORTUGAL, SLOVENIA and VENEZUELA. The Anglo-Saxon countries, the UNITED STATES, CANADA (BC) and NEW ZEALAND also seemed to have a comparatively

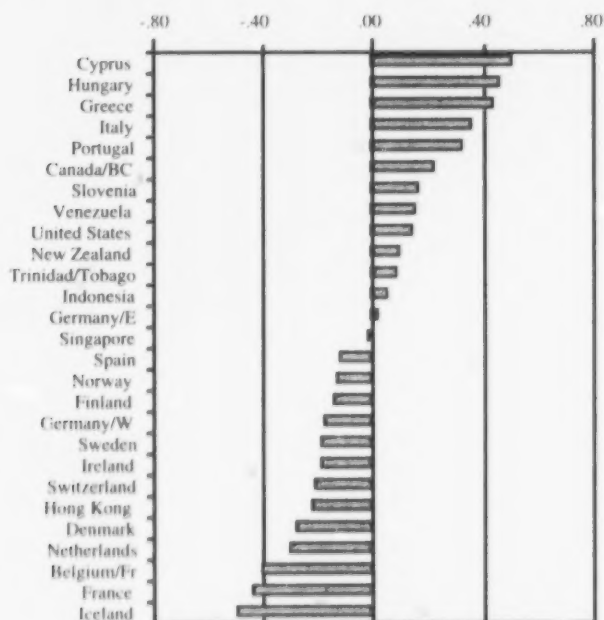


Figure 5.7. Average factor scores for Comprehension instruction

strong emphasis on comprehension. Within the ten West European countries with similar level of development, the comprehension emphasis was generally weaker. All had means below zero. The rank order was: NORWAY, FINLAND, GERMANY (WEST), SWEDEN, SWITZERLAND, DENMARK, the NETHERLANDS, BELGIUM (FRENCH), FRANCE and ICELAND.

The standard deviation indicates how much the teacher responses vary in a given country. High variation among teachers was found in VENEZUELA (.43). In SLOVENIA, by contrast, there was a strong uniformity in the teacher responses to the questions related to comprehension instruction (.22).

(2) Emphasis on phonics

The majority of the students involved in this study (in Population A) were in grade four, by which point in a student's school career most of the beginning instruction is over. Hence, one would not expect much emphasis on letter-sound relationship, blending and decoding skills among the teachers. Surprisingly enough, however, the average teacher in most countries reported a rather frequent (almost once per month) assessment of the ability to segment and blend sounds in words. They also generally expressed a favorable attitude towards phonics elements in teaching.

Countries with high factor scores were HONG KONG, INDONESIA, IRELAND, SINGAPORE and TRINIDAD AND TOBAGO. The case of HONG KONG is somewhat

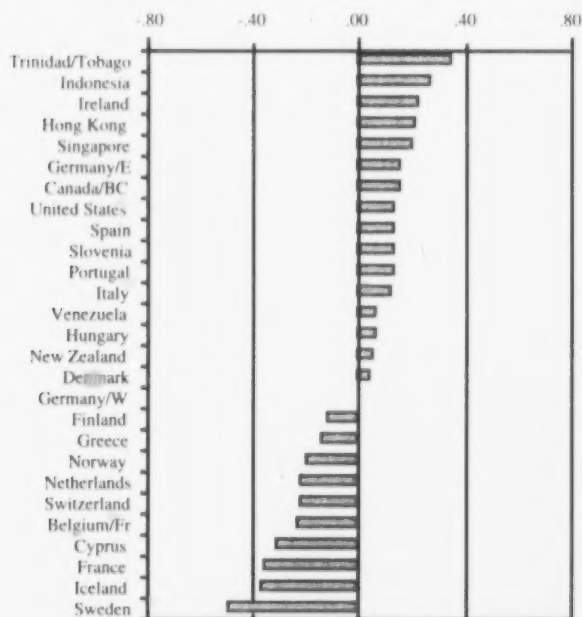


Figure 5.8. Average factor scores for Phonics emphasis

surprising considering the Chinese script which is basically non-phonemic, although the importance of phonological elements in written Chinese is often underestimated when it is classified as a logographic or sometimes ideographic script.

The Anglo-Saxon countries had an intermediate position with the highest score in CANADA (BC). All of the ten West European countries had lower scores than NEW ZEALAND. The rank order was: DENMARK, GERMANY (WEST), FINLAND, NORWAY, the NETHERLANDS, SWITZERLAND, BELGIUM (FRENCH), FRANCE, ICELAND and SWEDEN. In this field of teaching, Sweden was obviously an outlier with the lowest average score of all countries involved in the study.

The highest standard deviations were found in CYPRUS (.50) and GREECE (.47) whereas the INDONESIAN teachers responded with the highest uniformity (.20).

(3) General emphasis on assessment

Emphasis on assessment in reading instruction might be interpreted in different ways. One possibility is that such emphasis reflects care, good planning and systematic management. Another alternative interpretation is that emphasis on assessment is typical of highly centralized educational systems where accurate records of the students' progress and standardized testing are required by the Ministry of Education. A third alternative is that extensive testing reflects fragmentation and compartmentalization of the reading curriculum where

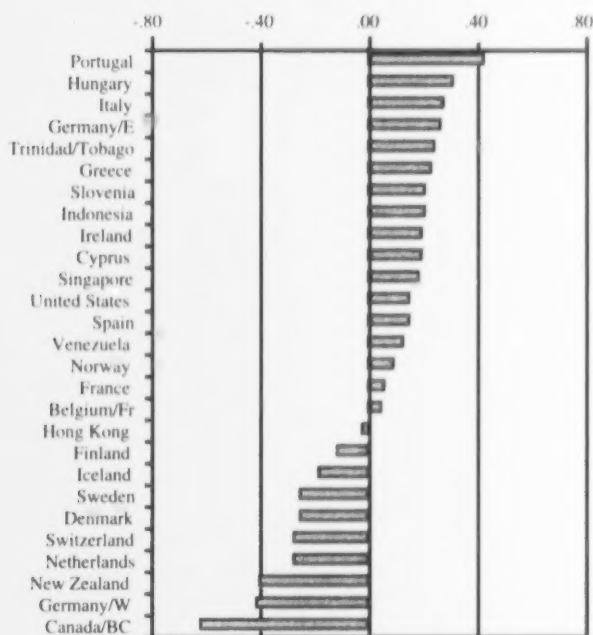


Figure 5.9. Average factor scores for General assessment emphasis

subskills are emphasized rather than a more unified language arts curriculum. Whatever the background is, the variation across countries was quite clear as shown in Figure 5.9.

High emphasis on assessment was found in GREECE, CYPRUS, GERMANY (WEST), HUNGARY, INDONESIA, IRELAND, ITALY, PORTUGAL, SLOVENIA and TRINIDAD AND TOBAGO. Some of these countries have strongly centralized school systems (GREECE, CYPRUS, HUNGARY, SLOVENIA). Among the Anglo-Saxon countries, where many similarities often are observed, a clear deviation was found this time. CANADA (BC) and NEW ZEALAND seemed to be strongly reluctant to assessment of reading as indicated by their bottom position in the rank order of countries, whereas the UNITED STATES was closer to an intermediate position. Most West-European countries had low emphasis on assessment.

The standard deviations varied from .52 in NEW ZEALAND to .21 in PORTUGAL.

(4) Assessment of low-order skills

This construct is more specific than the general assessment factor. The focus on low-order skills reflects a more restricted, skill-oriented view of reading. A correlation with the accuracy-order-sequencing factor would be expected. The pooled international data set actually yielded a correlation of .32 which was significant but not very high in terms of amount of variance explained.

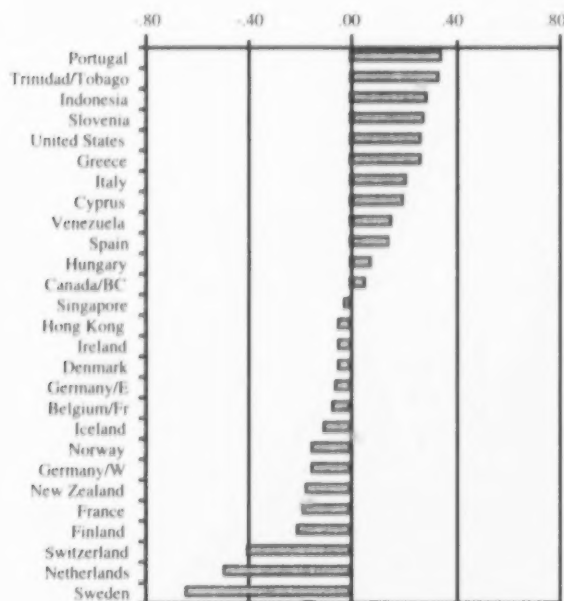


Figure 5.10. Average factor scores for Assessment of low-order skills

Again, the leading countries were CYPRUS, GREECE, INDONESIA, ITALY, PORTUGAL, SLOVENIA and TRINIDAD AND TOBAGO. But also the teachers in the UNITED STATES gave high ratings here. All the West European countries had negative means with SWEDEN as the clear outlier again (-.64).

SLOVENIAN teachers gave the most uniform responses ($SD=.17$), and the most variation was found in SWEDEN (.63).

(5) Encouragement to read

This construct is built on only two items in the questionnaire. But apparently it has worked well across countries and has a satisfactory reliability. To encourage students to read more and use the library more is certainly recognized by most teachers as a highly desirable practice although it might be easy to forget it in the daily schoolwork.

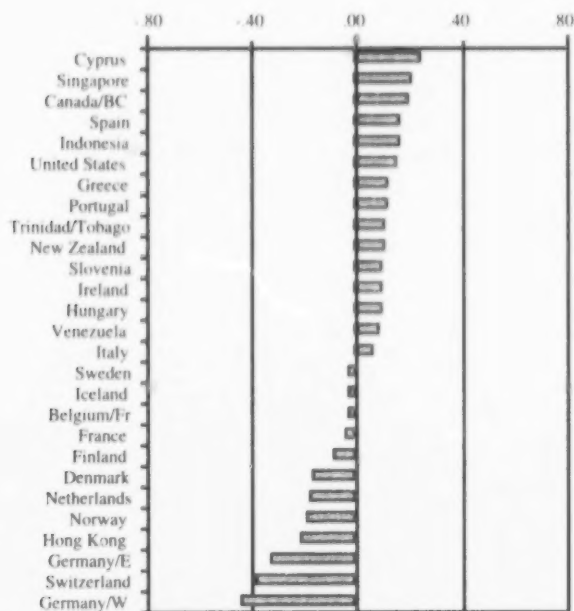


Figure 5.11. Average factor scores for Encouraging students to read

Not unexpectedly, the high scoring countries were CYPRUS, GREECE, SPAIN, INDONESIA, SINGAPORE and TRINIDAD AND TOBAGO. High ranks were also occupied by the UNITED STATES, CANADA (BC), and NEW ZEALAND. Perhaps, encouragement is a more important element in the teaching culture of these countries than in the West European countries, in particular the two GERMANIES and SWITZERLAND.

The distribution of standard deviations across countries was very even in this case (.46 to .28).

(6) Taking students' interests into account

This construct also involves risks of compliance, and one could expect the same countries as before to take the lead. The data did not confirm this expectation. Among the leading countries were also found DENMARK, FINLAND and CANADA (BC), and among the low-scoring countries IRELAND and HONG KONG could be located. No clear-cut interpretation can be offered to explain this pattern. Standard deviations varied from .21 (HUNGARY) to .51 (VENEZUELA).

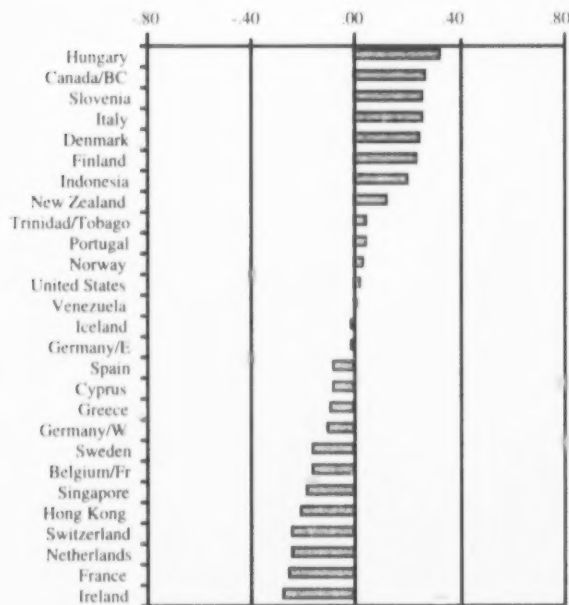


Figure 5.12. Average factor scores for Taking student's interests into account

(7) Student-oriented reading

Although this construct emerged in the secondary analysis and was rather difficult to label, it is more focused on reading activity than construct (6) and may be somewhat less vulnerable to compliance. Many of the items involved in this construct indicate a 'modern' approach to teaching where the students' active interaction with texts is particularly emphasized. Countries with frontier

positions in reading research and with a well-educated teaching force would be expected to have high mean scores on this construct. This expectation was partly met. CANADA (BC), NEW ZEALAND and the UNITED STATES all had high rank on this construct. Somewhat surprising was the low position of DENMARK, where the reading debate by tradition has been very lively. Standard deviations varied from .29 (SLOVENIA) to .47 (PORTUGAL).

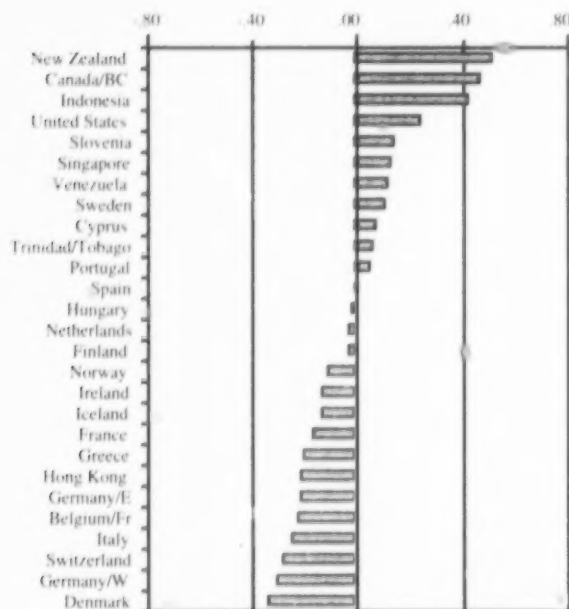


Figure 5.13. Average factor scores for Student-oriented reading

(8) Teacher-centered instruction

This construct has many similarities with construct (1) on comprehension instruction. Here, the active role of the teacher is more emphasized.

The leading countries on "teacher-centered instruction" were those with low ranks on the achievement scale: CYPRUS, GREECE, INDONESIA, PORTUGAL, TRINIDAD AND TOBAGO and VENEZUELA. The teaching practices covered by this construct do not seem very harmful to reading development. On the contrary, they conform quite well to modern conceptions of good teaching. The high position of the low-achieving countries might then partly be explained by compliance.

Low scores on this construct were observed among all Nordic countries together with GERMANY (WEST), the NETHERLANDS and SWITZERLAND. Standard deviations were quite uniform across all countries (.26 to .42).

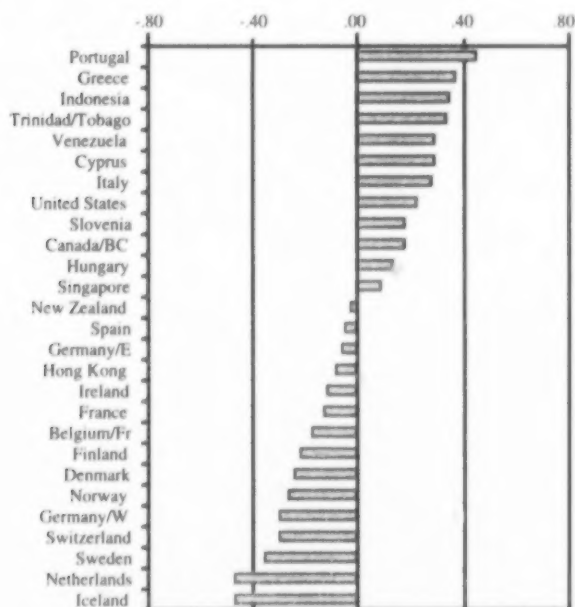


Figure 5.14. Average factor scores for Teacher-centered instruction

(9) Reading aloud to children

Over the last years reading specialists have become increasingly aware of the educational power involved in the practice of reading aloud to children (e.g., Wells 1986). By listening to a well-read story, students are exposed to the specific linguistic forms which are typical of written language as opposed to oral language. They also get used to the typical structure of written discourse (story grammar). By being exposed to good literature at an early stage, they also have the chance of gradually recognizing the enjoyment of reading and of developing a lasting interest in literature. Although this is well-recognized by reading specialists, it is not necessarily common wisdom among teachers. Some teachers may regard reading aloud to students as a kind of entertainment which can be offered as a reward for good behavior rather than as a powerful instructional method.

High emphasis on reading aloud to children was found in CANADA (BC), ICELAND, NEW ZEALAND, NORWAY, SWEDEN and the UNITED STATES. The high score in CANADA (BC) might be related to the fact that the students there were

younger than in most other countries. One would expect that younger students more often than older enjoy the benefit of being read to by the teacher. On the other hand, the students of the other high-scoring countries on this construct had an average or above average age. A high score probably reflects a modern teaching orientation rather than an age adaptation.

Low scores were observed in GERMANY (EAST and WEST), HONG KONG, HUNGARY and FRANCE. Standard deviations varied from .24 (CANADA (BC)) to .44 (IRELAND).

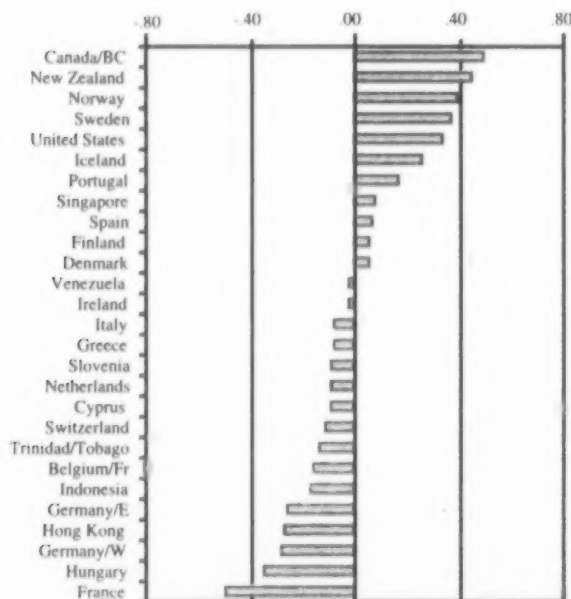


Figure 5.15. Average factor scores for Reading aloud to children

Concluding comments

To summarize the results reported in this section, there was a certain invariance in the response pattern across countries in Population A. In one set of countries, the reported level of activity in almost every aspect of teaching and assessment was high. It is unlikely that this response pattern actually mirrors what takes place in many of these classrooms. In any case, it did not show up in the achievement of the students as can be seen in the next chapter.

Another recurring pattern is that the teachers in the UNITED STATES, CANADA (BC) and NEW ZEALAND, in that order, generally reported higher activity levels than the teachers of Western European and Nordic countries on the same level of economic development. No simple explanation of this fact can be offered. One might speculate on the role of the English language as a more difficult

written form to cope with in the first stages of reading acquisition, which in turn might have increased the awareness of instructional issues among educators. But it should also be remembered that there was more time available for reading instruction in the Anglo-Saxon countries. Thus, an elevated frequency level can be expected.

Relationship Between Some Proximal Teaching Conditions and Teaching Practices

One would expect that the *number of students in the class* sets some important constraints on how reading is taught. Small classes, for example, would facilitate management problems and encourage teachers to employ more informal and student-centered approaches. Large classes, on the other hand, might require more strict procedures. However, the results did not indicate any clear relationship between class size and teaching practices. A few significant correlations were obtained only in a few countries.

The proportion of *students needing remedial help* is a variable reflecting the teacher's perception of the situation in the class. One would expect this to influence the way they approach reading instruction. However, no consistent pattern could be observed across countries.

The proportion of *students speaking another language* is certainly also a factor that is expected to influence instructional practice. But no clear relationships could be revealed in the available data in this case either.

To summarize, only very few significant correlations between proximal teaching conditions and approaches to reading instruction were found. Sometimes, the direction of the relationship changed from one country to another. This weak and inconsistent association might indicate either a lack of validity for the teaching constructs due to a fundamental bias involved in the questionnaire technique or the fact that there are stronger and more basic factors determining the teaching culture than the proximal conditions of the classroom. Such strong determinants might be deeply embedded in the educational subculture of a country, a region or a generation of teachers.

In the next chapter the relationship between proximal teaching conditions, teaching practices and student achievement will be further analyzed at the between-country level. The relationship between teacher characteristics and teaching practices was reported in Chapter 4. This issue will also be reconsidered in a broader perspective in the next chapter.

Teaching Orientations in Population B

The Teacher Questionnaire for Population B was designed only for descriptive purposes. It had fewer questions on instructional strategies and activities for reasons given in Chapter 2. In order to describe and compare the emphasis on instructional strategies in different countries, two dimensions were selected

which fall into four categories that have been prominent in recent reading research (Dole et al. 1991, Paris et al. 1992, Pearson et al. 1992, Pearson and Fielding 1991) and which were represented to a certain extent in the Teacher Questionnaire.

The first dimension reflects the relation to the reading comprehension process proper. On this dimension, reading comprehension instruction is defined by emphasizing either a set of specific cognitive-linguistic *subskills* or flexible and adaptable *strategies*. The skill orientation is assumed to be more teacher-centered than the strategy orientation which is characterized by an actively participating student.

The second instructional dimension focuses on text type and function. On this dimension, instruction stresses either *literature* and narrative comprehension or *functional* reading for learning and everyday activities as well as expository and document texts.

Skill versus strategy orientation

The skill versus strategy orientation was reflected in the following questionnaire items on instructional activities and strategies:

Skill orientation

*answering text comprehension
questions in writing
listening to students reading aloud
learning new vocabulary systematically
learning new vocabulary from text
looking back over what they have
read*

Strategy orientation

*relating experiences to reading
thinking about what they already know
about the same topic
talking to somebody else about what
they will read
trying to predict what will come next
writing something of their own on
what they have read*

Comparing the means between countries, the skill orientation in instruction was most frequently applied in CYPRUS, BOTSWANA, NIGERIA, ITALY, GREECE and the PHILIPPINES whereas strategic activities were most common in CYPRUS, CANADA (BC), the UNITED STATES, the PHILIPPINES and BOTSWANA.

In order to discover the emphasis on orientations in each country and to control the difference of time allocated to language instruction as well as *compliance effect*, the differences between the means of skill and strategy orientations were calculated. The results are presented in Figure 5.16.

Consequently, only CANADA (BC), FINLAND, NEW ZEALAND, SWEDEN, the UNITED STATES and VENEZUELA favored the strategic orientation at the expense of the skill approach. By contrast, the strongest skill emphasis was expressed in PORTUGAL, GREECE and ZIMBABWE and the second strongest in ITALY, SPAIN, NIGERIA and BOTSWANA.

Strategy orientation was evidently more common among the high-achieving nations than the low-achieving. Among the highest, only FRANCE and HUNGARY

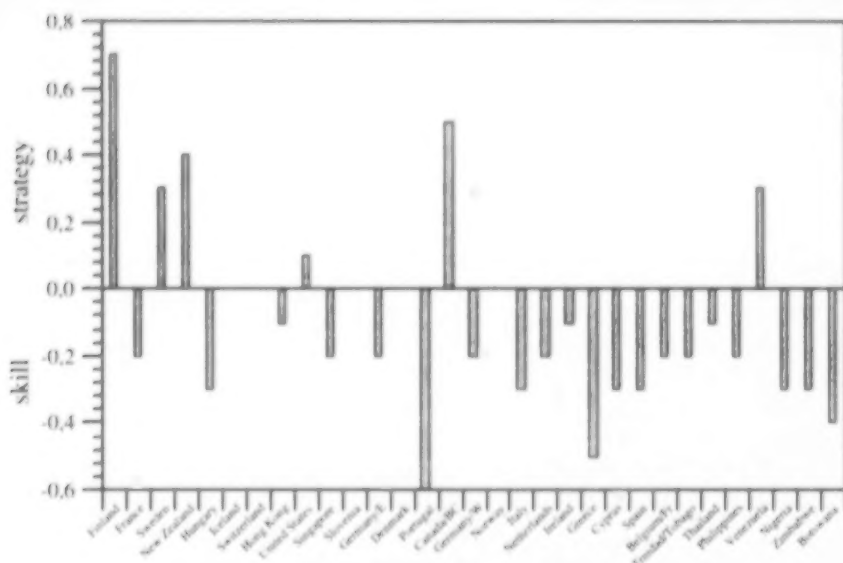


Figure 5.16. Between-country variation in differences between scores on strategy-oriented and skill-oriented teaching in Population B

stressed skill orientation, while among the low-achieving countries only VENEZUELA reported strategy-oriented activities.

When instructional orientation was juxtaposed with how the aims of instruction were ranked in each country, high-ranked or valued *aims* indicated a more progressive or 'modern' strategy orientation than the preferences related to instructional *activities*. With regard to aims, the teachers in 19 countries emphasized the strategy orientation, whereas in reporting the frequencies of instructional activities only six countries stressed the strategic approach. Apparently, there is an interesting discrepancy between holding an attitude towards educational goals and the daily instructional practice. It would certainly be important to further determine the nature of the relationship between teacher beliefs and their classroom actions in observational studies (see e.g., Richardson et al. 1991).

The countries where aims had strategic emphasis while instructional actions revealed skill orientation were CYPRUS, FRANCE, GERMANY (EAST), GERMANY (WEST), GREECE, HONG KONG, PORTUGAL, and THAILAND. The countries where both aims and instruction expressed strategic emphasis were CANADA (BC), FINLAND, NEW ZEALAND, SWEDEN, the UNITED STATES and VENEZUELA.

Literature versus functional orientation

The literature versus functional orientation was reflected in the following questionnaire items on instructional strategies and activities:

Literature orientation

*discussion of books
reading plays or dramas
studying the style or
structure of the text*

Functional orientation

*learning library skills
reading in other subjects
learning to use illustrations
(graphs, diagrams,
tables) to understand text*

According to the country means, literature orientation was preferred in instruction in most countries, although functional orientation was also manifested to some extent. The strongest literature orientation was expressed in HUNGARY, BOTSWANA, HONG KONG, NIGERIA, the PHILIPPINES, PORTUGAL, and the UNITED STATES. The strongest functional orientation was discovered in BOTSWANA, the PHILIPPINES and HUNGARY.

When the two orientations were compared (Figure 5.17), it was discovered that the literature approach was clearly favored in FRANCE, HONG KONG, IRELAND, PORTUGAL and the UNITED STATES, whereas the functional approach was preferred in BOTSWANA, ICELAND, SWITZERLAND, GERMANY (EAST), GERMANY (WEST), the PHILIPPINES and ZIMBABWE.

On the whole, the high-achieving countries used a literature approach more frequently than a functional approach. However, among the low-achieving countries BELGIUM (FRENCH), TRINIDAD AND TOBAGO and VENEZUELA emphasized

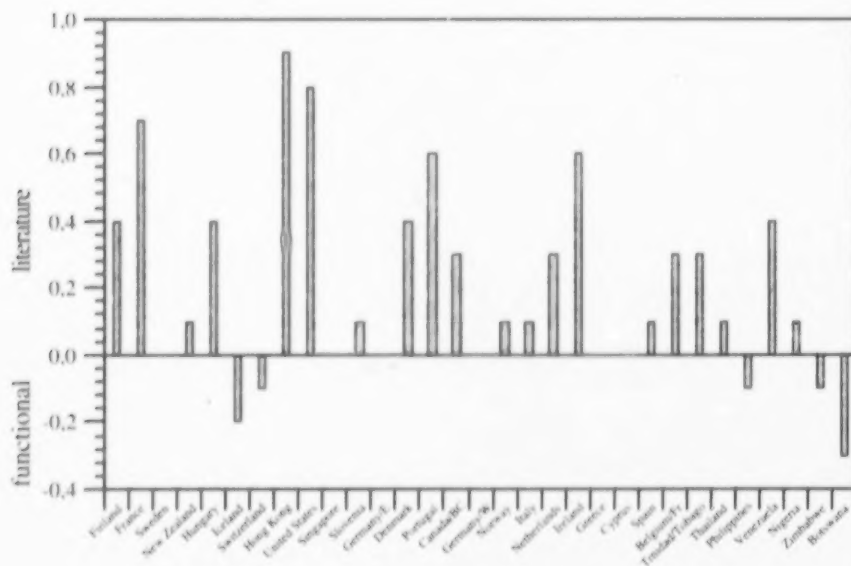


Figure 5.17. Between-country variation in differences between scores on literature-oriented and functionally-oriented teaching in Population B.

literature orientation, and among the high-achieving countries ICELAND and SWITZERLAND favored the functional approach.

When instructional orientations were compared with valued aims in each country some inconsistency was found. Even though literature orientation was highly valued in every participating system, in instructional activities the functional orientation was more common than a literature approach in five countries. The strongest consistency favoring literature was found in FRANCE, HONG KONG, IRELAND, PORTUGAL and the UNITED STATES. Also in DENMARK, FINLAND, HUNGARY and VENEZUELA the literature orientation was rather consistent.

A two-dimensional analysis of teaching practices

When *strategy versus skill orientation* and *literature versus functional orientation* were set up as two orthogonal dimensions as in Figure 5.18, the national emphases on instruction became more evident.

A majority of countries were located in the lower right quadrant, that is, reading instruction is *literature-based and skill-oriented*. PORTUGAL is the clearest case of this combination. Actually, this type of teaching seems to be favored in many central and Southern European countries. Among the high-achieving countries, FRANCE, HONG KONG and HUNGARY were located in this quadrant.

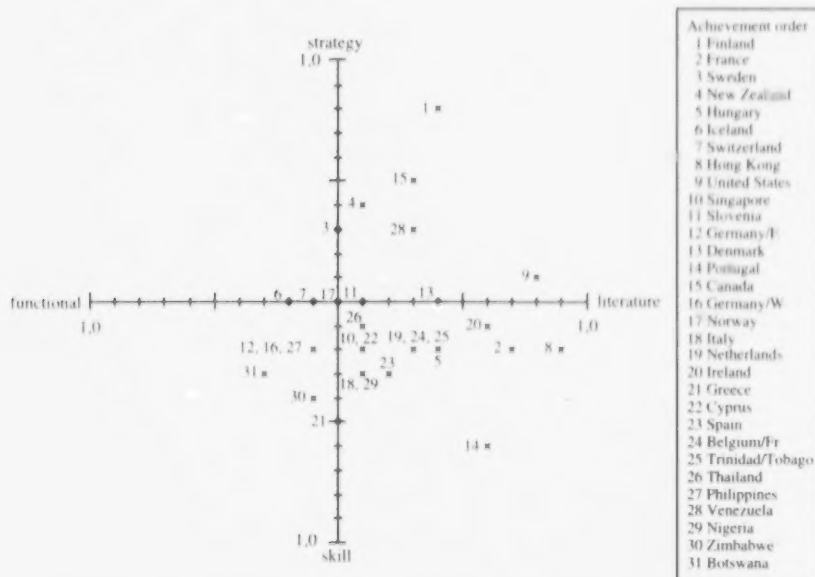


Figure 5.18. Two dimensions of teaching orientation in Population B

The *literature-based strategy orientation* (upper right quadrant) was clearly emphasized in some other high-achieving countries: FINLAND, NEW ZEALAND and the UNITED STATES. The purest case here was FINLAND, the country with the highest achievement of all. Carefully expressed, a teaching practice emphasizing strategies of comprehension and based on literature does not seem to be harmful to student reading achievement.

The *functional skill orientation* was preferred in many developing countries: BOTSWANA, the PHILIPPINES and ZIMBABWE. No clear case could be located in the upper left quadrant (*functional strategy orientation*). However, SWEDEN expressed a clear strategic orientation but a more balanced literature/functional emphasis. On the other hand, ICELAND and SWITZERLAND favored functional orientation but took a balanced position on the strategy-versus-skill dimension.

The pattern observed in the two-dimensional space of Figure 5.18 invites some speculation of the underlying cultural differences that might cause the grouping. However, the risks of exposing prejudice and simplistic stereotypes on national characteristics are obvious. It comes as no big surprise to many that teachers in FRANCE and IRELAND give high priority to a literature-based instruction. The general cultural climate in these countries seems to have a strong literature orientation which should be reflected in the educational system. HONG KONG's remarkable emphasis on literature and de-emphasis of functional aspects of literacy would be more surprising. The students' profile of reading achievement with remarkably high scores in document reading would suggest a more pragmatic orientation of the HONG KONG society.

The strategic orientation of teachers in countries like CANADA (BC), FINLAND, NEW ZEALAND, SWEDEN and the UNITED STATES might reflect the stronger impact in these countries of newer theories of reading, mostly originating from reading research in North America. According to such theories, readers understand text by determining how the ideas they read relate to their existing schemes or knowledge. Thus, comprehension is considered to be a constructive process involving strategic behavior.

Assessment in Population B

The assessment of reading may have different purposes and consequently different formats, criteria and pragmatics, but mainly the assessment is designed either for the teacher and classroom instruction or for the educational policy makers and external accountability (Calfee and Hiebert 1991, Hiebert and Calfee 1992).

If the purpose of assessment is the development of classroom instruction, the teacher often combines several sources of information and favors the instruments that have a strong link to curriculum and instructional activities. On the other hand, if the assessment is designed for external accountability and general curriculum development, the instruments are usually designed by experts, and they are usually quite independent of current curriculum and instruction. Most

often they are standardized multiple-choice tasks. A reasonable assumption, then, is that frequent use of multiple-choice questions indicates assessment for accountability. The more 'soft' methods of assessment, such as oral discussions, teacher quizzes, and essays about literature indicate assessment for instruction.

Figure 5.19 presents the between-country variation in the two dimensions of assessment. The variation in using the multiple-choice format was indeed considerable. It was almost never used in DENMARK. By contrast, THAILAND reported a weekly practice of such assessment. The general tendency seems to be that developing countries and Mediterranean countries use multiple-choice questions with higher frequency than the Nordic countries. The variation in frequency of assessment for instruction is not very large. Most countries have an average close to about once per month.

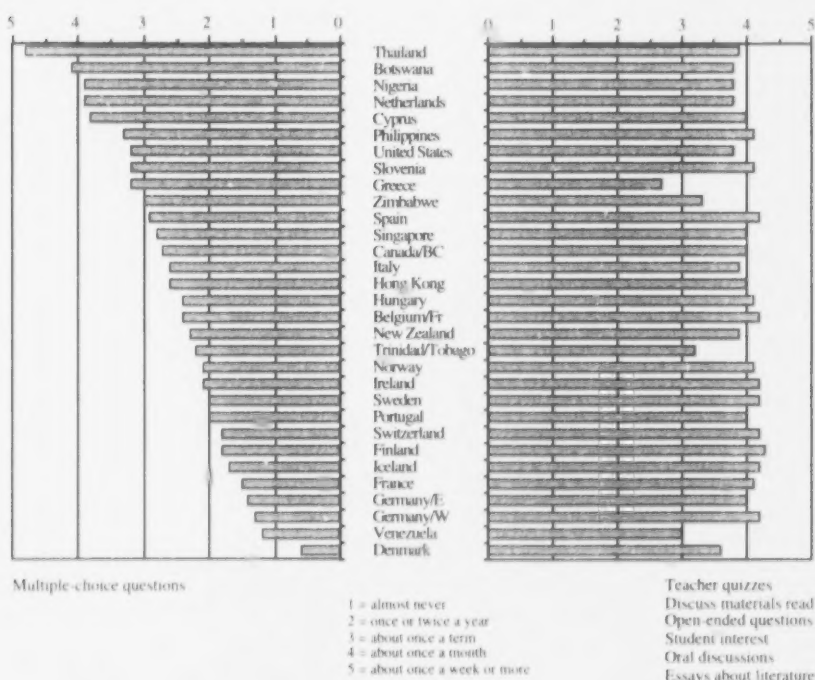


Figure 5.19. Between-country variation in two types of assessment in Population B

The differences between the two dimensions are presented in Figure 5.20. High positive differences, indicating emphasis on assessment for instruction rather than for accountability, were found in all Nordic countries together with FRANCE, GERMANY (EAST and WEST) and SWITZERLAND. Negative or near zero differences were observed in GREECE, THAILAND, BOTSWANA, NIGERIA and the

NETHERLANDS, suggesting that external accountability is important in these countries. With few exceptions this tendency goes together with lower achievement.

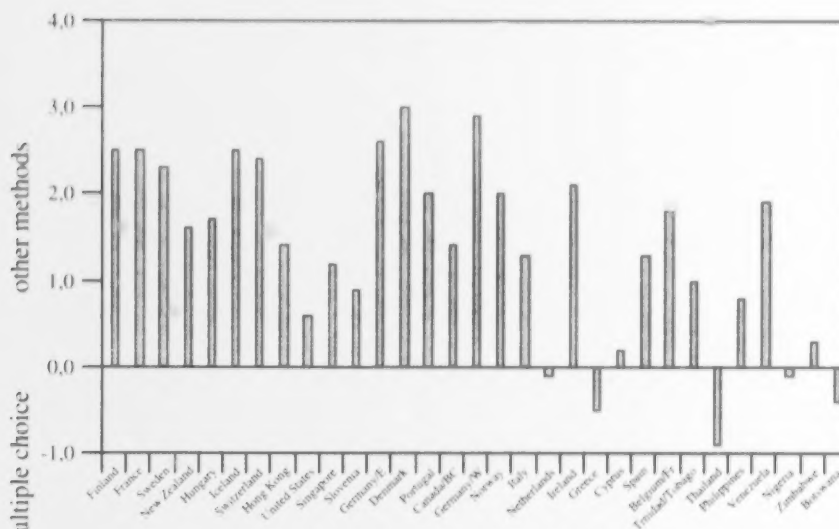


Figure 5.20. Between-country variation in differences between two types of assessment in Population B

Summary

The chapter on how reading is taught in different countries can now be summarized.

- On the average, teachers in both populations in most countries allocate more time to teaching narration than to the other two main domains of reading (exposition and documents). In some developing countries teachers report relatively more emphasis on documents as compared with teachers in the Western countries.
- Grouping of students is a common practice in almost all countries. The most common type of grouping is ability grouping.
- There are wide variations in the extent to which teachers assign homework in reading and also concerning how much time teachers expect students to spend on their reading homework.

- The large number of questions on instructional practices in Population A was reduced to a more manageable size by principal component analyses of the pooled international data set. Thus, nine basic constructs or factors of teaching were established. These factors were applicable in most countries and could serve as a basis for meaningful comparisons of teaching styles.
- In some countries, the size of the *compliance effect* (social desirability) in answering the questions on teaching seemed to be considerable, making the interpretation of the results difficult.
- When comparing the teaching practices in the different countries the total time available for reading instruction should be taken into account.
- A remarkable invariance in the response pattern across countries was observed. A possible explanation is related to the invariant demand characteristics of the task of acquiring reading literacy regardless of language and culture. External teaching conditions are also rather similar across the world. Some 20-40 students are sitting in a classroom, most often under the leadership of one teacher.
- Only a few significant correlations between proximal teaching conditions and teaching practices were found.
- The teaching practices in Population B were analyzed within a two-dimensional system. One dimension went from an extreme skill-orientation to a strong emphasis on active strategies for reading comprehension. The other dimension concerned functional or pragmatic orientation versus literature orientation. Most high-achieving countries were located in the quadrant where the teaching orientation was both strategic and literature-based.
- Two dimensions of assessment were analyzed in Population B. One concerned assessment for accountability and the other assessment for instruction. Low-achieving countries had more emphasis on assessment for external accountability.

CHAPTER SIX

TEACHING PRACTICES AND STUDENT ACHIEVEMENT

This chapter is devoted to an analysis of the data from Population A to investigate whether the teaching factors of concern in this study have an influence on student reading achievement. If anything emerges from such an analysis, guidelines could be provided for the improvement of teaching and teaching conditions. The earlier IEA study of reading comprehension reported by Thorndike (1973) gave no grounds for optimism on this point. The somewhat disheartening conclusion from this study was that very little evidence could be provided of the impact of school and teaching factors on student reading achievement. The richness of data in the present study together with new approaches and more refined analytical tools might make it possible to disentangle the complicated network of interacting and interrelated variables and demonstrate that teaching, after all, makes a difference.

Between-country analysis

First, the simple correlations between the teaching constructs for Population A and student achievement across countries will be examined. Table 6.1 presents the correlations between each of the nine constructs and the average achievement scores (across the three domains: narrative, expository and document) where the units of analysis are countries.

Table 6.1. Correlations between teaching constructs and student achievement at the between-country level.

Teaching construct	Correlation with achievement
1. Comprehension instruction	-.23
2. Phonics emphasis	-.35
3. General assessment emphasis	-.21
4. Assessment of low-order skills	-.42
5. Encouragement to read	-.19
6. Take students' interests into account	-.12
7. Student-oriented reading	-.22
8. Teacher-centered instruction	-.44
9. Read aloud to students	+.23

Most correlations between teaching constructs and student reading achievement were negative. On this level of analysis only *read aloud to students* had a positive correlation with achievement.

The negative correlations should not come as a surprise. In an earlier section it was demonstrated that many low-achieving countries tended to give the highest ratings on the teaching questions. Also, in this case, great care is advisable when correlational data is to be interpreted. For example, is it a harmful practice to encourage students to read? Or does phonics instruction prevent students to become good readers? Not necessarily. First, it should be recognized that the correlations are rather weak, which means that only a small proportion of the variance in performance can be explained by the construct scores. Secondly, the direction of the causation cannot easily be determined. It could well be the case that teachers confronted with poor readers adopt a teaching strategy which they think is beneficial to these students. Over and above 'true' association between teaching and achievement there is also the hypothesized *compliance effect* to be taken into account. The between-country level is certainly not the most appropriate level for capturing the relationship between instructional practices and student achievement.

Analysis of the pooled data set

In this step of the analysis of the impact of teaching on reading achievement, the responses of all 4,800 teachers in Population A were pooled together in a common international data set, where the student achievements were treated as class means. When looking at all these classes with their specific teaching conditions and instructional practices, things rapidly become very complicated. It is not easy to tease out one factor and examine its influence on another factor. All sorts of confounding factors can obscure the picture and make interpretations difficult. For example, the classes vary considerably in socio-economic background. Classroom conditions, teacher characteristics and, indirectly, teaching practices can be expected to covary with such background factors. And it is also known that student achievement is, to a large extent, determined by socio-economic factors. When an association between teaching and achievement is found, it is then difficult to know whether it is teaching per se that is important or if it is just a reflection of socio-economic factors.

If the socio-economic background of the classes accounts for most of the variation in achievement, there is not much left for the teaching factors to explain. However, with the teaching dimension in focus, as in this booklet, it is still important to find out what there is in teaching, if anything, that is over and above background resources. The only way to go then is to control for socio-economic background, that is, keep such factors constant when investigating the association between teaching and achievement.

The conceptual framework presented in Figure 2.1 will be the point of departure. The aim is to estimate the strength of the direct and indirect relationships between various components in the model. The technique to be used is called "path analysis". The structural relationships are specified as if

there were causal relationships between the components, and the quantitative implications of such a causal structure were estimated with a LISREL program. It should be noted that there is no real chance to 'prove' causality with this technique. We still have the same cross-sectional survey data to deal with. But we can act as if there is a causal structure and see whether such a model is not disconfirmed by the data.

In the path model presented in Figure 6.1, three controlling factors have been added to the original model. *Type of community* indicated one of the following categories: (1) village or rural community (2) small town community (3) large town community (4) city of 1 million or more or any equivalent extreme category of relevance in a particular country. It was assumed that teaching conditions, teachers and instructional practices are on the average different in rural areas as compared to highly urbanized areas.

Community resources indicated whether the school was located in a community where there is access to one or more of the following literacy-related facilities: public library, bookstore, secondary level schools, higher education institution. It was assumed that the more of these things are accessible the more stimulating is the environment as well as student achievement.

Finally, the students were asked to estimate the *number of books at home*. The following alternatives were presented: *none, 1-10, 11-50, 51-100, 101-200, more than 200*. A reasonable assumption was that the more books you find in a home, the richer the literacy stimulation provided in the home. It also reflects the general socio-economic standard of the home. Thus, this factor was expected to have a strong influence on student achievement and on student voluntary reading. Teaching conditions, teachers, and teaching practices were also assumed to be somewhat related to the socio-economic standard of the homes.

Table 6.2 presents the path coefficients. The direct relationships between the three background variables and each of the factors specified in the model are presented.

Number of books at home evidently had a clear direct impact on many variables, especially on achievement. The negative relationship with class size and the proportion of students speaking a language other than the test language is notable. It indicates that schools where the students come from homes with high socio-economic levels have smaller classes and fewer immigrant students. An opposite influence on class size was exerted by community type. Obviously, rural communities had smaller classes.

The question then arises as to whether there is anything left for the teacher and teaching factor to explain once the background variables have had a chance to exert their influence. In Figure 6.1, only the path coefficients related to the outcome factors have been included and only coefficients greater than .10. The meaning of a path of that size is that if the value of an antecedent factor is increased by the size of one standard deviation unit, the outcome variable will be increased by 10 percent of a standard deviation unit.

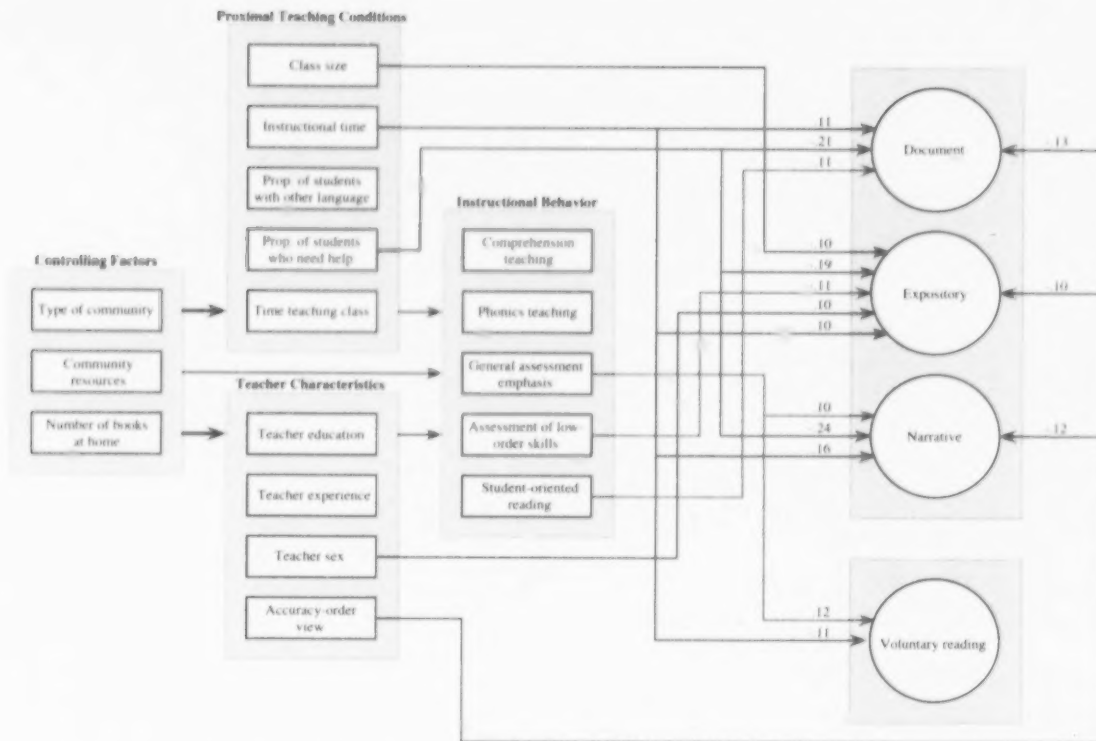


Figure 6.1. A path model of the relationship between teaching factors and reading achievement. Only path coefficients greater than 0.10 are indicated.

Table 6.2. The direct associations between background variables and factors in the model (only significant coefficients are specified, $p < .01$)

	Community type	Community resources	Books at home
Teaching condition			
Class size	.27	--	-.24
Instructional time	--	.07	-.14
Prop. stud. other lang.	.11	--	-.22
Prop. stud. need help	--	--	-.10
Time teaching class	-.05	-.05	.11
Teacher characteristics			
Education	.11	--	.11
Experience	--	--	--
Sex	.11	--	.09
Accuracy-order view	.05	-.12	-.38
Instructional behavior			
Comprehension teaching	--	.10	-.14
Phonics teaching	--	--	-.09
General assessment emph.	--	--	-.08
Assessment of low-order sk.	--	--	-.10
Student-oriented reading	--	-.05	.07
Reading achievement			
Documents	.10	.09	.32
Expository	.05	.09	.39
Narrative	.06	.10	.38
Voluntary reading	--	--	.27

As can be seen, there are no really large effects left after the introduction of the control variables. Nevertheless, there are some notable effects. Although they may be small, they are at least pure in the sense that they are not confounded with background factors.

Class size had a negative effect on achievement, at least on expository reading. This is the direction that teachers would expect (i.e., that smaller classes go with higher achievement), although it has been hard to demonstrate within more restricted data analyses. Likewise, instructional time now had a demonstrable positive effect on achievement.

The proportion of students needing remedial help had the expected negative association to the outcome variables and was not much moderated by the introduction of controlling variables. After all, the teachers' judgment of poor achievement among the students could even be regarded as an outcome variable.

The positive coefficient for teacher gender once again confirms the slight superiority of female teachers discussed earlier. The negative effects of accuracy-order views, assessment of low-order skills, and student-oriented reading are not readily interpretable. Part of the truth might be related to the compliance

effect that seems to emerge in different ways. Negative coefficients would be obtained if teachers of poorly achieving students had a stronger tendency to give high-frequency responses to the items on teaching in the teaching questionnaire as a more or less unconscious defense or compensation for an uneasy suspicion of being a poor teacher. Or the poorer students may be seen to be at a stage where they require help with those skills which better readers acquired earlier. Thus, the high ratings by teachers of low-achieving students reflect adaptation to students' needs. However, it should be stressed that there is no independent evidence supporting these hypotheses or speculations.

The conclusion to be drawn from the information presented in Figure 6.1 is that factors related to teaching conditions, teacher characteristics and teacher behavior have a rather small impact on student achievement when factors related to home and community resources are partialled out. The fact that something is left for teaching, over and above home and community background, indicates that schooling does, after all, make some difference. In countries with relatively small variation in socio-economic conditions, it might well be the case that teaching factors will have a chance to show up as powerful determinants of reading achievement.

Country control

As a final step in the path-analyses, countries were introduced as controlling factors on the far left of the structural model. Technically speaking, the countries were treated as 'dummy' variables. The question was how much the teaching factors contributed to explain variation in achievement between all classes when also country-specific factors had been partialled out. In other words, are there any invariant factors related to teaching over and above country variation as well as home and community variation. In an international study of this kind such a question has a status of critical importance. The search for invariance is after all at the heart of all scientific endeavors.

When the country control was introduced, very little variance was left to be explained by the factors in the model. By looking at the total effects on achievement, that is, both the direct arrows and the indirect paths through intermediate constructs or factors, a fair picture is given of what is left. It turned out that none of the constructs related to teaching practices had any significant effect on achievement. Among the teacher characteristics, teacher sex still had a total effect which was significant. *The proportion of students needing remedial help* was the only factor among the teaching conditions that could resist the country control and still yield a significant effect (-.20) on achievement. The strongest factor of all was *number of books at home*. Here the total effect (or correlation) on achievement was close to .40 and the direct path had a size of about .30. This is indeed a remarkable finding. Regardless of country, language, culture, wealth and teaching resources, the single most critical factor in the development of literacy is related to the literate environment in the home.

The absence of significant teaching effects indicates that teaching and teaching conditions to a large extent must be understood as situated or embedded in the specific cultural configuration characterizing a given country.

Within-country correlations

Although it has been difficult to demonstrate clear effects of teaching on achievement at the level of pooled data, there might still be a chance to find effects within countries, especially in egalitarian societies with wide variations of teaching practices. However, only a few significant correlations between teaching constructs and achievement in Population A were found when the analysis was made on the data from each country separately.

Comprehension instruction correlated significantly with achievement only in GREECE (.23), ICELAND (.18) and in SWEDEN (.17).

Phonics emphasis was negatively correlated with achievement in SWITZERLAND (-.24) and in the UNITED STATES (-.21) and positively in INDONESIA (.22).

General assessment emphasis correlated positively with achievement in two countries, GREECE (.20) and ICELAND (.17), and negatively in one country, SLOVENIA (-.21).

Assessment of low order skills showed a very mixed pattern. It had a positive correlation in CANADA (BC) (.17), TRINIDAD AND TOBAGO (.21), and VENEZUELA (.18) and a negative correlation in GERMANY (EAST), (-.20), the NETHERLANDS (-.24) and SWITZERLAND (-.19). Negative, but only small correlations were also found in SWEDEN (-.12), the UNITED STATES (-.13) and SLOVENIA (-.16).

Encouragement to read, which had the highest negative correlation in the between-country analysis, had now only one (positive) correlation, in IRELAND (.22).

Taking students' interest into account did not correlate with achievement in any country.

Student-oriented reading correlated positively in DENMARK (.17), FINLAND (.24), FRANCE (.16), ITALY (.20), SWEDEN (.25), and TRINIDAD AND TOBAGO (.17), and negatively only in GERMANY (EAST) (-.22).

Teacher-centered instruction had the highest correlation in HONG KONG (.18). No other significant correlations were found.

Reading aloud to students had a negative correlation with achievement in GERMANY (EAST) (-.24). Remaining correlations were not significant.

Can more significant correlations between teaching constructs and achievement be found when the separate reading domains are considered? Not much is gained by this breakdown. In *Comprehension instruction*, NORWAY showed up with a marginally significant correlation with document scores (.19). In *General assessment emphasis*, the NETHERLANDS had a significant correlation with the document scale (.19). In *Student-oriented reading*, BELGIUM (FRENCH) had a significant correlation with the document scale (.19). In *Teacher-centered instruction*, a few more countries entered the scene: GREECE with documents

(.19) and exposition (.22), INDONESIA with exposition (.20), and CANADA (BC) and the NETHERLANDS, both with a negative correlation (-.21) between teacher-centered instruction and the expository scale.

As we have seen, the correlations between teaching constructs and achievement were quite few at the between-class within-country level and generally rather low. The most promising construct seems to be *student-oriented reading*.

The next question is: Do these correlations remain when adjustments for various teaching conditions are made? This requires country-specific path models of the kind represented by Figure 6.1. In further analyses of the data from this study, country structures will be compared with the full international model. Then, in each specific country, significant deviations from the international model can be identified and interpreted. Mostly, a deviation is a signal of an interaction between a specific factor and the country under consideration. It indicates that this variable has a specific meaning and impact in this country as compared to other countries.

This illustrates the importance of separate national data analyses, where configurations of variables and constructs might be different from what has been used in the international analyses. After all, an international study should look for diversity as well as for unity, even though diversity does not always permit simple comparisons along common scales.

More effective and less effective classrooms

The last step in the analysis of teaching data in this booklet involves a closer look at extreme groups of classes in each country. Postlethwaite and Ross (1992) developed a procedure for identifying the 20 most effective classes and the 20 least effective classes in each country in Population A. Being effective in their sense means that the achievement is higher than expected given the homes from which the students in the class come, whereas ineffective means lower than expected achievement.

The classes were selected by a statistical technique where the average reading achievement of the classrooms in each country were related to a composite measure of home resources (such as *number of books*, *home possessions*, *meals per week* and *use of the test language at home*). There was, of course, a significant correlation between home background and reading achievement, which means that it was possible to predict with some accuracy the expected achievement for a class given a certain level of average home resources. However, the prediction is far from perfect. Some classes will, in fact, show a far higher achievement than expected, and other classes will have an achievement level which is far below what was expected. In each country, the 20 classes with the most pronounced overachievement (more effective classrooms) and the 20 classes with the most pronounced underachievement (less effective classrooms) were selected for further study. It should be noted that with this definition of effectiveness it was possible for either a relatively high-

or a relatively low-scoring class to be described as effective because its reading scores were far above what could be expected from a knowledge of the home background of its students. Likewise, it was possible for either a relatively high-scoring class or a low-scoring class to be described as less effective.

The critical issue was the identification of factors that most clearly discriminate these two extreme groups of classrooms. With the focus on the present booklet, it is most natural to ask whether there were any clear differences between effective and less effective classrooms in terms of teaching conditions, teacher characteristics and teaching strategies. If consistent differences in some respects were to be found across many countries, some important signals would have been discovered which might have been masked by many interfering factors operating when the full sets of data were analyzed. In that sense, the extreme group analysis provides a magnifying glass.

Postlethwaite and Ross used a large number of indicators to identify which had the most discriminating power in each country. Here, the focus is restricted to the teaching factors investigated in this report. They are, once again, listed in Table 6.3. Each factor is accompanied by a number indicating the number of countries in Population A in which a clear difference was found between effective and less effective classes.

Table 6.3. Number of countries where teaching factors discriminated significantly between effective and less effective classes

Variables	Number of countries
Proximal teaching conditions	
Class size	11
Time teaching this class	9
Instructional time	6
Teacher characteristics	
Teacher readership	17
Teacher sex	14
Teacher experience	11
Teacher views: accuracy, order	8
Teacher education	0
Teaching practices	
Assessment of low-order skills	11
General assessment emphasis	10
Comprehension teaching	9
Student-centered reading	9
Phonics emphasis	6
Encouragement to read	6
Taking student interests into acct.	5
Teacher-centered reading	0
Reading aloud to students	0

In some countries, very few teaching-related factors turned out to discriminate between effective and less effective classrooms (e.g., CANADA (BC), NEW ZEALAND, the UNITED STATES, PORTUGAL, the NETHERLANDS, BELGIUM (FRENCH) and GERMANY (EAST and WEST). Instead, factors related to community and school resources were more powerful. In some other countries several teaching factors appeared in the list of the top indicators (e.g., GREECE, HONG KONG, ITALY and SWITZERLAND).

Among the **proximal teaching conditions**, class size was the most frequently occurring discriminator. In all 11 countries, the effective classes were larger than the less effective. One possible interpretation is that in some countries smaller classes are arranged when there are many poorly performing students. For example, in HONG KONG and SINGAPORE the effective classes are not big because they are located in urban areas. These nations are highly urbanized. Thus, other reasons for the benefit of large classes must be looked for.

The variable with the next highest frequency as a potent discriminator was the time the teacher has taught the class. Evidently, there is an advantage to have the opportunity to learn to know the children and follow their progress over a longer period of time. On the other hand, as was noted in Chapter Three, it might just be a question of a high turnover rate of teachers as well as students in less stable areas.

Finally, in this group of variables, instructional time is slightly longer in the more effective classes in at least six countries, which is not unexpected. On the other hand, it may seem surprising that the powerful factors related to the proportion of students with *other home language* and students *in need of remedial help* did not show up as discriminators. However, it should be recognized that all factors related to home resources have already been removed in the process of identifying the extreme group of classes.

When it comes to **teacher characteristics**, several rather strong findings were observed. Most notable, perhaps, is teacher readership which was an important discriminator in 17 countries with all three domains of readership equally represented. Although this factor disappeared from the overall international model because of insignificant relationship to achievement, it now reappeared when only the extreme classes were considered country by country. Obviously, teacher readership reflects the level of intellectual and professional aspiration among the teachers and indirectly may be an indication of high-quality teaching, at least when the *compliance effect* is kept to a minimum as is the case in this analysis at the within-country level.

Again, teacher gender plays a significant role, as the female teachers were more commonly found in the effective classrooms than in the less effective ones. Teachers in the more effective classrooms also had longer experience than teachers in less effective classrooms, at least in 11 of the countries. It seems as if the attitude towards instruction, where order and accuracy is emphasized, was a good discriminator in eight countries. Teachers of effective classes in these

countries valued accuracy and order more than teachers in less effective classrooms. This is not easily interpreted in view of the findings presented in Figure 4.12 where a negative relationship to achievement was reported. However, the present analysis was made within countries and with home background controlled, and a relatively small group of classes have been examined. Another interesting observation in this new analysis is that the education level of the teachers was not a discriminator in any country. It might well be the case that the variation in educational level within a given country in Population A is too small.

Do teachers in effective classrooms teach in a different way as compared to teachers in less effective classrooms? This is certainly a crucial question with implications for teacher training and in-service training. Among the factors related to teaching practices, the following appeared as discriminators in some ten countries: *General emphasis on assessment, assessment of low-order skills, student-oriented reading and comprehension instruction*. In five or six countries *encouragement to read, taking students' interests into account and phonics emphasis* also had discriminatory power. However, there was no consistent pattern across countries where a given set of factors went together in several countries. They were rather spread out in different directions. Nevertheless, it should be noted that *student-oriented reading and comprehension instruction* went together in seven countries (FINLAND, GREECE, HUNGARY, ITALY, SWEDEN and SWITZERLAND), and *phonics emphasis* and *assessment of low-order skills* went together in six countries (FINLAND, FRANCE, HONG KONG, INDONESIA, ITALY and NORWAY). Thus, it would appear that, in some countries, teaching does make a difference. Nevertheless, as Postlethwaite and Ross pointed out, the use of extreme groups was in order to generate likely indicators to be used in further national analyses with full data sets.

A Portrait of a Good Reading Teacher

Is there sufficient basis now to make generalizations leading up to a composite of features characterizing the best possible teacher of reading, working in any country, under optimal conditions? Certainly not. As has been repeatedly emphasized, teaching is necessarily bound to unique configurations of cultural and historical conditions. It is not possible simply to take successful practices in reading instruction from one country and expect that they will work equally successfully in another cultural setting. There is also a fallacy of using correlational studies to prescribe teaching practices. When a successful teaching practice appears in many countries and when certain teaching conditions turn out to be favorable in many countries, there is a basis, however, for some generalization, although it must be done with great care and sensitivity. With these reservations in mind, it might be worthwhile to attempt a brief summary

statement by drawing a picture of a successful teacher of reading, although the painting is done with a very broad brush.

A good teacher for 9-year-olds in this international sense is usually a female teacher. She has many years of teaching experience. Outside of school, the good teacher reads a lot, both professionally about education and also literature. She or he has stayed with the class ever since the children took their first steps into school literacy, and has followed their progress carefully by informal as well as more formal assessment methods. The good teacher gives the students many opportunities to do independent, silent reading in a library which is richly stocked, and she often holds discussions with the students about the books they have read. The children of the good teacher are encouraged to read outside school and to use the library often. During reading lessons, the children are guided to interact actively with the text by relating their own experiences to what is read, by making predictions of upcoming events during reading and by making generalizations and inferences. The good reading teacher also takes the students' interests into account when selecting reading materials. The student-oriented approach with a clear focus on strategies for understanding does not prevent the good teacher from using phonics elements now and then in her teaching to meet particular students' needs or when unknown long words, like names, are encountered.

Concluding comments

A good teacher is, of course, much more than has been captured in this brief sketch which is limited by the kind of data provided in this study. Direct classroom observations and in-depth interviews with many teachers and an analysis of the materials they use for reading instruction might have provided sufficiently rich information for painting a more detailed, vivid and accurate portrait.

It is inevitable that the international perspective of this study highlighted unity as well as diversity thereby clarifying, or at least increasing our awareness of, the complexity of the issue of instructional effectiveness. Simple prescriptions or technical specifications of optimal teaching conditions and instructional strategies are not the main keys to raising the level of reading literacy around the world. The empirical data analyzed and presented in the present booklet might serve as a starting point for further reflections rather than as fuel for the debate fire on the best way of teaching reading. Deeper analyses and alternative interpretations of the data will certainly also be seen in further work on national as well as on international levels. There is certainly still much to examine regarding the teaching of reading.

Summary

The chapter on how teaching practices are related to student reading achievement in Population A can now be summarized.

- On the between-country level, most correlations between the teaching constructs and student reading achievement were negative. Compliance effects might be part of the explanation of this finding.
- In a path analysis based on the pooled international data set, community factors and home factors were controlled. With this control, small effects of teaching factors on achievement remained, which indicates that teaching, after all, makes a difference. Nevertheless, the path analysis demonstrated that the single most critical factor in the development of literacy is related to the literate environment in the students' homes.
- When countries were introduced as controlling factors, almost nothing was left for the teaching factors to explain over and above the country effects. This implies that teaching and teaching conditions primarily must be understood as situated or embedded in the specific cultural-historic pattern characterizing a given educational system.
- When a subset of effective and less effective classrooms were compared, a number of teaching indicators discriminated between these extreme classes in many countries, again indicating that teaching makes a difference.
- In many countries the most effective classrooms were larger than the less effective ones, and the teachers of the effective classrooms had stayed with their students longer than had the teachers in the less effective classrooms.
- Teachers in effective classes reported more extensive reading habits than teachers in less effective classrooms.
- Female teachers were more commonly found in the effective classrooms.
- The educational level of the teachers was not a discriminating factor in any country.
- Several discriminating teaching strategies were identified in several countries. Most often, the following were observed: Comprehension instruction, Phonics emphasis, General assessment emphasis, and Assessment of low-order skills. These practices characterized the more effective classrooms.

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NOTES

How should children be taught to read? This question has always been highly debated by teachers and educators around the world. This booklet presents empirical data of relevance for the controversial issue. It builds on an international survey including more than 10 000 teachers and 200 000 students in 31 countries. A broad spectrum of teaching conditions, teacher characteristics and instructional practices are examined and related to the students' reading achievement.



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